Massachusetts Department of
ELEMENTARY & SECONDARY
EDUCATION

Release of March 2010 MCAS Retest Items

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Massachusetts Department of Elementary and Secondary Education

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Table of Contents

Commissioner's Foreword

I. Document Purpose and Structure **1**

II. English Language Arts Retest **4**

A. Composition **5**

B. Reading Comprehension **7**

III. Mathematics Retest **36**

Commissioner's Foreword

Dear Colleagues:

The vision of the Department of Elementary and Secondary Education is to work in partnership with policy makers, communities, parents, school districts, and students to build a system that will prepare all students to succeed as productive and contributing members of our democratic society and the global economy. To assist in the achievement of this vision, the Department regularly releases MCAS test items to provide information regarding the kinds of knowledge and skills that students are expected to demonstrate. I am pleased to announce that all questions from the March 2010 retests are included in this document.

The *Release of March 2010 MCAS Retest Items* is available only through the Department website at www.doe.mass.edu/mcas/testitems.html. The test items for both ELA and Mathematics can be easily printed from this site. I encourage educators to use the relevant sections of this document together with their *Test Item Analysis Report Summaries* and *Test Item Analysis Rosters* as guides for planning changes in curriculum and instruction that may be needed to ensure that schools and districts make regular progress in improving student performance.

Thank you for your support as we work together to strengthen education for our students in Massachusetts.

Sincerely,

Mitchell D. Chester, Ed.D.
Commissioner of Elementary and Secondary Education

I. Document Purpose and Structure

Document Purpose and Structure

Purpose

The purpose of this document is to share with educators and the public all of the test items from the March 2010 MCAS English Language Arts and Mathematics Retests. Local educators will be able to use this information to identify strengths and weaknesses in their curriculum and instruction, and to guide the changes necessary to more effectively meet their students' needs.

This document is also intended to be used by school and district personnel as a companion document to the test item analysis reports. Each school in which a retest was administered receives a March Retest *Test Item Analysis Report Summary* and a *Test Item Analysis Roster* for English Language Arts and Mathematics. These reports provide data generated from student responses. Each report lists, for the school receiving the report, the names of all enrolled students who took the March 2010 Retest in that report's content area, and shows how each student answered each test question (item). The report labels each item as multiple-choice, open-response, short-answer, or writing prompt and identifies the item's MCAS reporting category. Item numbers in this document correlate directly to the "Item Numbers" in the test item analysis reports.

Structure

Chapters II and III of this document contain, respectively, information for the March 2010 English Language Arts and Mathematics Retests. Each of these chapters has three main sections.

The **first section** introduces the chapter by listing the Massachusetts curriculum framework content strands assessed by MCAS in that chapter's content area. These content strands are identical to the MCAS reporting categories under which retest results are reported to schools and districts. The first section also provides the Web address for the relevant framework and the page numbers on which the learning standards assessed by the test items in the chapter can be found. In addition, there is a brief overview of the retest (number of test sessions, types of items, reference materials allowed, and cross-referencing information).

The **second section** contains the test items used to generate March 2010 MCAS student results for that chapter's content area. With the exception of the ELA Composition writing prompt, the test items in this document are shown in the same order and basic format in which they were presented in the test booklets. The Mathematics Reference Sheet used by students during MCAS Mathematics test sessions is inserted immediately following the last question in the Mathematics chapter.

Copyright information for all reading passages is provided in the document. Note that the Department has obtained permission to post all ELA passages that appear on its website. While the Department grants permission to use the posted test items for educational purposes, it cannot grant or transfer permission to use the passages that accompany the items. Such permission must be obtained directly from the holder of the copyright. For further information, contact Student Assessment Services at 781-338-3625.

The **final section** of each chapter is a table that cross-references each item with its MCAS reporting category and with the framework standard it assesses. Correct answers to multiple-choice questions and Mathematics retest short-answer questions are also listed in the table.

Materials presented in this document are **not** formatted **exactly** as they appeared in student test booklets. For example, in order to present items most efficiently in this document, the following modifications have been made:

- Some fonts and/or font sizes may have been changed and/or reduced.
- Some graphics may have been reduced in size from their appearance in student test booklets; however, they maintain the same proportions in each case.
- All references to page numbers in answer booklets have been deleted from the directions that accompany test items.
- The four lined pages provided for students' initial English Language Arts Composition retest drafts are omitted.

II. English Language Arts Retest

A. Composition
B. Reading Comprehension

English Language Arts Retest

Test Structure

The English Language Arts retest was presented in the following two parts:

- the ELA Composition retest, which used a writing prompt to assess learning standards from the Massachusetts *English Language Arts Curriculum Framework*'s **Composition** strand
- the ELA Reading Comprehension retest, which used multiple-choice and open-response questions (items) to assess learning standards from the *English Language Arts Curriculum Framework*'s **Language** and **Reading and Literature** strands

A. Composition

The English Language Arts (ELA) Composition retest was based on learning standards in the Composition strand of the Massachusetts *English Language Arts Curriculum Framework* (2001). These learning standards appear on pages 72–83 of the *Framework*, which is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, ELA Composition retest results are reported under the **Composition** reporting category.

Test Sessions and Content Overview

The ELA Composition retest included two separate test sessions, administered on the same day with a short break between sessions. During the first session, each student wrote an initial draft of a composition in response to the writing prompt on the next page. During the second session, each student revised his or her draft and submitted a final composition, which was scored in the areas of Topic Development and Standard English Conventions. The Scoring Guides for the MCAS English Language Arts Composition are available at www.doe.mass.edu/mcas/student/elacomp_scoreguide.html.

Reference Materials

At least one English-language dictionary per classroom was provided for student use during ELA Composition retest sessions. The use of bilingual word-to-word dictionaries was allowed for current and former limited English proficient students only. No other reference materials were allowed during either ELA Composition retest session.

Cross-Reference Information

Framework general standards 19–22 are assessed by the ELA Composition.

March Retest Writing Prompt

WRITING PROMPT

Often in works of literature, a character is influenced by his or her family.

From a work of literature you have read in or out of school, select a character who is influenced by his or her family. In a well-developed composition, identify the character, describe how the character is influenced by his or her family, and explain how the character's experience relates to the work as a whole.

B. Reading Comprehension

The English Language Arts Reading Comprehension retest was based on learning standards in the two content strands of the Massachusetts *English Language Arts Curriculum Framework* (2001) listed below. Page numbers for the learning standards appear in parentheses.

- Language (*Framework*, pages 19–26)
- Reading and Literature (*Framework*, pages 35–64)

The *English Language Arts Curriculum Framework* is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, ELA Reading Comprehension retest results are reported under two MCAS reporting categories: **Language** and **Reading and Literature**, which are identical to the two framework content strands listed above.

Test Sessions

The ELA Reading Comprehension retest included three separate test sessions. Sessions 1 and 2 were both administered on the same day, and Session 3 was administered on the following day. Each session included selected readings, followed by multiple-choice and open-response questions. Reading passages and test items are shown on the following pages as they appeared in test booklets. For further information, contact Student Assessment Services at 781-338-3625.

Reference Materials

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only, during all three ELA Reading Comprehension sessions. No other reference materials were allowed during any ELA Reading Comprehension retest session.

Cross-Reference Information

The table at the conclusion of this chapter indicates each item's reporting category and the framework general standard it assesses. The correct answers for multiple-choice questions are also displayed in the table.

English Language Arts

Reading Comprehension: Session 1

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

Before Jackie Robinson broke the color barrier in Major League Baseball, Negro League baseball flourished in this country. Read this 2006 article about how the Baseball Hall of Fame is beginning to open its doors to more of the Negro League players. Then answer the questions that follow.

Getting Their Due

by Robert Sanchez

Negro leagues players finally find their way to Cooperstown — and the Hall of Fame

1 Richard Wilkinson thought Dad would never make it. The 88-year-old waited for the Baseball Hall of Fame's call for much of his adult life, anticipating the message that would solidify his deceased father's place in baseball history.

2 Year after year, there was no word on the legacy of J.L. Wilkinson, the man who created the most storied black baseball franchise ever.

3 "Dad's whole life was about baseball," Richard Wilkinson says of his father, who owned the Kansas City Monarchs for 28 years. "The game meant everything to him."

4 J.L. Wilkinson was the creator of night baseball, the man who signed Satchel Paige and Jackie Robinson to professional contracts and developed teams that remain the gold standard against which all historical black baseball is compared.

5 Now, 86 years after he started the Monarchs and four decades after his death, J.L. Wilkinson finally got The Call. He wasn't alone.

6 Sixteen men and one woman who pioneered black baseball prior to the sport's integration will be enshrined this month at the National Baseball Hall of Fame in Cooperstown, New York. The election will almost double the number of Negro leagues and pre-Negro leagues players and executives in the Hall and is among baseball's first major efforts acknowledging the role that African-Americans played during the game's intense segregation.

7 The enshrinements are a culmination of six years of research, debates, and votes from a committee of 12 historians who reviewed résumés of those players from black baseball teams near the turn of the 20th century through the 1950s. Nearly 100 players and executives were considered for enshrinement before secret ballots were cast in February.

8 "My biggest worry, after I found out we elected 17, was that people were going to think that was too many," says Dick Clark, one of the committee's voters. "I've been surprised."

9 Historians say the election's impact will give new life to baseball's rich history and could open the Hall of Fame to other overlooked black stars. Among those to be enshrined are five

pre-Negro leagues players and one pre-Negro leagues executive, Sol White, who penned the first narrative of black baseball in 1907.

10 "Think about baseball and how it started the civil rights movement, how these people came before *Brown vs. Board of Education,*[1] before Rosa Parks was told to sit in the back of that bus," says Buck O'Neil, 94, a former star first baseman for the Monarchs and a volunteer chairman of the Negro Leagues Baseball Museum in Kansas City. "It was baseball that integrated this country, and it's wonderful that so many deserving people are going to be acknowledged for that."

11 The Hall of Fame vote and the extensive research are part of a first-of-its-kind project funded with a $250,000 grant from Major League Baseball, which used independent researchers to record thousands of newspaper box scores[2] from 1920 to 1954 while also documenting black baseball's history since the Civil War.

12 The exhaustive 800-page volume given to the Cooperstown museum in 2005 shows more conclusively that the caliber of play in black leagues equaled and, in some instances, exceeded that of white baseball at the time.

13 Among those elected from the Negro leagues era are some of the most feared hitters of their time: Eight-time all-star Willard Brown had a career batting average of well above .300 and twice won the Puerto Rican Winter League Triple Crown; and Biz Mackey, a catcher who amassed a .329 batting average with seven teams, is among the top 10 Negro leagues players in career RBIs.

14 The executives, too, pushed the game to a broader audience.

15 Effa Manley, the first woman elected to the Hall, supported anti-lynching campaigns as co-owner of the Newark Eagles. And Wilkinson — whose Monarchs teams won two Negro World Series titles and were among the most successful barnstorming[3] clubs in the 1930s — had at least 14 hall-of-famers play for his clubs.

16 Both Manley and Wilkinson are white. None in the group of 17 is alive.

17 "Even though no one will be able to stand at that podium [during the enshrinement], I'd rather this come now than never," says Stanley Glenn, 80, a former catcher for the Philadelphia Stars in the 1940s and president of the Negro Leagues Baseball Players Association. "I honestly wondered if I would ever see this day. I just wish more of the guys could have seen it."

18 Fewer than 200 of the leagues' players are still alive.

19 Brooklyn's Colored Union Club and Philadelphia's Pythian Club were among the first all-black teams, formed in the 1860s to offset widespread segregation in baseball's professional ranks.

20 Though some leagues were integrated, racial unrest squeezed black players from majority-white teams, increasing the number of all-black touring clubs near the turn of the 20th century. With such a defined color

[1] *Brown vs. Board of Education* — a 1954 Supreme Court decision that outlawed segregation in public schools
[2] *box scores* — a graphic summary of a baseball game that shows how each player performed
[3] *barnstorming* — traveling around the country

barrier, teams such as the New York Cuban Giants and the Michigan Page Fence Giants traveled the country and beat supposedly superior white teams in exhibitions.

21 It wasn't until 1920, though, with the formation of the Negro National League, that black players began to get widespread attention. Teams popped up from Indianapolis to Birmingham to Baltimore and competed for the Negro World Series title.

22 "Those were special times," says Andy Cooper Jr., whose father, pitcher Andy Cooper Sr., is among those to be enshrined this month. "Statistics don't tell the whole story."

23 But they do give a glimpse into competition at the time.

24 The Hall's history project began with 50 authors, historians, and researchers who traveled across the country and sorted through 80-year-old box scores to re-create games.

25 Some researchers were able to find thousands of individual statistics covering a 34-year period, which then were used to create player profiles. Still, the work is far from a complete history.

26 Only 75 percent of the box scores were found, in large part because newspapers stopped following Negro leagues ball in the 1940s. In-depth scores were rarely posted after Jackie Robinson appeared in the major leagues in 1947, though the Negro leagues lasted through the 1950s even as much of the talent had turned to the majors.

27 And there were other problems. Box scores didn't always record at-bats, batters who walked, earned runs, or pitchers who recorded wins.

28 "Believe me, you have to have a passion for this," says Wayne Stivers, a retired sports memorabilia dealer from Evergreen, Colorado, who participated in the research.

29 One other flaw, former players say, is that researchers only recorded games against other Negro leagues opponents, not semiprofessional or touring teams. The fear, researchers say, is that those teams were vastly inferior to their Negro leagues opponents and would have created inflated statistics.

30 "Even though this is the largest study into the role that African-Americans played in the sport, it's never going to be finished," says Brad Horn, a spokesman for the Hall of Fame, which elected its first Negro leagues player, Paige, in 1971. "But don't overlook the fact that we now have statistics to debate, which could be one of the best things to come out of the work."

31 At the least, historians say, the project moved the game from hyperbole (slugging catcher and hall-of-famer Josh Gibson never hit 800 career home runs in Negro leagues play) to a more realistic version of black baseball at the time (Gibson's at-bat-to-home-run ratio likely is better than Hank Aaron's and Willie Mays').

32 Other feats have been confirmed. Cool Papa Bell, the speedster of his era, scored from first base on a bunt at least once. And Gibson hit four home runs in a game.

33 "There's something new coming out every day with these numbers," Stivers says. "We tried our best to bring these guys back to life."

34 The statistics didn't add up for O'Neil, though.

35 A first baseman who became the first black major league coach and black baseball's most recognized ambassador, O'Neil finds himself on the outside.

36 He was considered for election but failed to get the mandatory minimum nine of 12 votes needed for induction. The vote has been kept a secret.

37 One voter, author Robert W. Peterson, was allowed to cast his ballot early because of illness. He later died.

38 Since the February vote, more than 50 newspapers nationwide have written editorials denouncing O'Neil's omission.

39 "First there was shock. Then there was anger," *Kansas City Star* columnist Joe Posnanski wrote shortly after the vote.

40 The one strike against O'Neil's candidacy, researchers say, is that his statistics didn't stand out. O'Neil's supporters say the three-time all-star's role promoting black baseball and his advocacy for other black players' enshrinement in the Hall of Fame is more than adequate.

41 Debates also extend to Manley, whose biographer was in the special voting group, and to Alex Pompez, another executive who once owned the New York Cubans and was elected despite being a racketeer[4] in the Dutch Schultz crime family. Pompez eventually was arrested and turned state's evidence.

42 But Richard Wilkinson says the honors are long overdue. His father, J.L. Wilkinson, formed integrated barnstorming teams, then moved to Kansas City where he became a charter owner in the Negro National League. Beginning in the late 1920s, portable lights traveled with his teams.

43 "He was an innovator," Richard says. "My dad didn't see color. He just wanted to know if you could play."

44 Wilkinson says the Hall of Fame should remain open for the others, especially O'Neil, because his dad would have wanted it that way. Hall officials say the opportunity is still there if more evidence becomes available.

45 "I hope this is just the beginning," O'Neil says. "There are a lot of guys out there who are still deserving."

[4] *racketeer* — a person who engages in illegal activities

1 In paragraph 5, why are the words "The Call" capitalized?

A. to show that the decision came too late

B. to show that Wilkinson's talent was overrated

C. to emphasize how momentous the decision was

D. to emphasize how grateful Wilkinson's family was

2 Based on the article, what do the contributions of Effa Manley and J.L. Wilkinson to Negro League baseball **mainly** suggest?

A. Owners should treat their players with respect.

B. Black players should have their own hall of fame.

C. Race should be insignificant when determining a person's legacy.

D. More research should be done about white owners of black teams.

3 Read the quotation from paragraph 22 in the box below.

> "Statistics don't tell the whole story."

What does Andy Cooper Jr. suggest in the quotation?

A. He is skeptical about the value of the project.

B. The experiences of the players cannot be recaptured.

C. The recollections of the former players are inaccurate.

D. He is upset his father did not become famous while alive.

4 According to paragraphs 26–29, why was the process of researching Negro League players often frustrating?

A. Few people attended Negro League games.

B. The Negro League teams played a different style of baseball.

C. Former players did not want to talk about their experiences.

D. Information about the players was not always well documented.

5 Based on paragraphs 30–32, what was revealed by the Negro League research?

A. the poor quality of Negro League baseball

B. the popularity of Negro League baseball

C. the true achievements of the players

D. the racial bias against the players

6 According to paragraphs 38–40, why do O'Neil's supporters think he deserves to be in the Hall of Fame?

A. He was an excellent first baseman.

B. He was both an athlete and a coach.

C. He made changes to the way baseball is played.

D. He worked to gain recognition for black players.

7 As it is used in paragraph 6, the word *enshrined* **most nearly** means

A. buried.

B. honored.

C. entertained.

D. investigated.

8 What is the meaning of *hyperbole* as it is used in paragraph 31?

A. exaggeration

B. anonymity

C. memory

D. opinion

Question 9 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 9 in the space provided in your Student Answer Booklet.

9 Based on the article, explain why the induction of 17 Negro League players and executives into the Hall of Fame was an important event. Support your answer with relevant and specific information from the article.

The speaker in Naomi Shihab Nye's poem expresses what it is like to live near a volcano. Read the poem and answer the questions that follow.

Negotiations with a Volcano

We will call you "Agua" like the rivers and cool jugs.
We will persuade the clouds to nestle around your neck
so you may sleep late.
We would be happy if you slept forever.
We will tend the slopes we plant, singing the songs
our grandfathers taught us before we inherited their fear.
We will try not to argue among ourselves.
When the widow demands extra flour, we will provide it,
remembering the smell of incense on the day of our Lord.

Please think of us as we are, tiny, with skins that burn easily.
Please notice how we have watered the shrubs around our houses
and transplanted the peppers into neat tin cans.
Forgive any anger we feel toward the earth,
when the rains do not come, or they come too much,
and swallow our corn.
It is not easy to be this small and live in your shadow.

Often while we are eating our evening meal
you cross our rooms like a thief,
touching first the radio and then the loom.
Later our dreams begin catching fire around the edges,
they burn like paper, we wake with our hands full of ash.

How can we live like this?
We need to wake and find our shelves intact,
our children slumbering in their quilts.
We need dreams the shape of lakes,
with mornings in them thick as fish.
Shade us while we cast and hook—
but nothing else, nothing else.

—Naomi Shihab Nye

10 How is the title of the poem ironic?

A. The volcano is unfairly blamed.

B. The volcano makes no compromises.

C. The speaker accepts her situation.

D. The speaker learns a valuable lesson.

11 *Agua* is the Spanish word for water. In line 1, what is the **most likely** reason the speaker calls the volcano "Agua"?

A. She wants the volcano to remain calm.

B. She thinks the volcano will eventually erode.

C. She believes the volcano is an important symbol.

D. She thinks the volcano provides hope for her people.

12 Based on the second stanza, what is the **main** cause of the people's desperation?

A. Their prayers are never answered.

B. Their village is poisoned by selfishness.

C. Their society lacks modern conveniences.

D. Their survival is dependent on the whim of nature.

13 Read lines 25–27 in the box below.

> We need dreams the shape of lakes, /
> with mornings in them thick as fish. /
> Shade us while we cast and hook—

Based on the lines, which of the following **best** explains what the people need?

A. time to think

B. plentiful food

C. assurance of a future

D. protection from the weather

English Language Arts

Reading Comprehension: Session 2

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and two open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

A high school quarterback prepares for a big football game in this excerpt from Friday Night Lights*, a book based on a true story that chronicles a season of the Permian High School team. Read the excerpt and answer the questions that follow.*

from Friday Night Lights

by H. G. Bissinger

1 Mike Winchell hated these moments in the field house, wandering around in his uniform as the minutes dripped away with excruciating slowness. Secretly he wished that he could be knocked out and not wake up until five minutes before game time when there was no longer any time to dwell on it. He was the quarterback and that gave him a certain status, because just about everybody in town knew who the quarterback was and the novelty of having his picture in the local paper had worn off long ago. But with all the responsibilities—learning the audible calls and the three-play packages, not getting fooled by that overshifted defense the Rebels liked to run—it was hard not to feel overwhelmed.

2 He awoke early that day, in the darkness of the shabby house on Texas Avenue that shamed him so much he wouldn't even let his girlfriend enter it. In silence he had carefully wrapped up some toast and bacon in paper towels so he would have something to eat when he got to school. Then he got his mother up so she could drive him there since, unlike most kids at Permian High School, he didn't have his own car. They barely said anything to each other, because he hated questions about the game. When she dropped him off she whispered, "Good luck," and then left.

3 Once he got to school he had to go to the pep rally, where his long, angular face, framed by balloons, had a look of delicate sadness as haunting as a Diane Arbus[1] photograph. It was a fascinating face, Huck Finnish, high-cheekboned, yet somehow devoid of expression, the eyes flat and deadened against the roar and tumult that surrounded him, impervious to it, unable to react.

4 He welcomed going to class afterward, finding relief in the equations spread across the blackboard in algebra II, glad to have something else filling his head besides the thousand and one things that were expected of him. But outside class the pressure intensified again, the Lee game hovering over him like a thundercloud, the incessant questions of the students as he walked through the halls driving him crazy and offering him no escape.

5 Everyone seemed uptight to him, even the teachers who always dressed up in black[2] on game day. When he walked through the halls of school during the season it wasn't

[1] *Diane Arbus* — a photographer known for her portraits of people on the fringes of society

[2] *black* — one of the school colors

as a proud gladiator, but instead he seemed enveloped in an almost painful shyness, his head ducked to the side and his eyes shifting furtively, fending off questions with one-word answers, especially hating it when people came up to him and asked, "Do y'all think you're gonna win?"

6 He had first started as a junior, and back then he had been so nervous that the butterflies started on Tuesdays. In the huddle his hands shook. Teammates looked at him and wondered if he was going to make it. But this season he was leading the district in passing and had cut his interceptions down to almost none. A big game against the Rebels would be further vindication, further proof that he had what it took to be a college quarterback in the Southwest Conference.

7 There could have been other options for him. During the season he had gotten a letter from Brown expressing interest in him because he was not only a decent quarterback but a good student. But for Winchell, who had never been east of the Texas-Louisiana border, the mere idea scared him to death. Rhode Island? Where in God's name was *Rhode Island*? He looked on a map and there it was, halfway across the earth, so tiny it could move into West Texas overnight and no one would ever know it, taking its anonymous place beside Wink and Kermit and Notrees and Mentone.

8 "Hell, Brown, that might as well have been in India" was the way he put it. He had read about the Ivy League[3] in the sports pages and seen a few of those games on ESPN where the caliber of play wasn't too bad but it sure as heck wasn't football the way he had grown up to understand football. He also got a nibble of interest from Yale, but when he tried to imagine what these schools were like, all he could think of was people standing around in goofy sweaters with little *Y*'s on the fronts yelling, "Go Yale, beat Brown."

9 A series of meetings was held in the field house, the five Permian coaches trying to pound in the game plan against Lee one more time. Afterward, as part of a long-standing tradition, all the lights were turned off. Some of the players lay on the floor or slumped against concrete posts. Some listened to music, the tinny sound from their headphones like violent whispering in a serious domestic spat. Winchell, who had gone over the audible calls in his mind yet again, agonized over the wait. It was the worst part of all, the very worst. After several minutes the lights came back on and he and his teammates boarded the yellow school buses waiting outside.

10 With the flashers of a police escort leading the way so there wouldn't be any wait at the traffic lights, the caravan made its way to Ratliff Stadium like a presidential motorcade.

. . .

11 The team left the dressing room and gathered behind a huge banner that had been painstakingly made by the cheerleaders. It took up almost half the end zone and was fortified by the Pepettes with pieces of rope like in some scene of war from the Middle Ages. It became a curtain. The players congregated behind it in the liquid, fading light,

[3] *Ivy League* — an athletic league comprising eight academically challenging colleges

yelling, screaming, pounding each other on the shoulder pads and the helmets, furious to be finally set loose onto the field, to revel in the thrilling roar of the crowd.

12 The fans couldn't see the players yet, but they could hear them bellowing behind that banner and they could see their arms and knees and helmets push against it and make it stretch. The buildup was infectious, making one's heart beat faster and faster. Suddenly, like a fantastic present coming unwrapped, the players burst through the sign, ripping it to shreds, little pieces of it floating into the air. They poured out in a steady stream, and the crowd rose to its feet.

13 The stillness was ruptured by a thousand different sounds smashing into each other in wonderful chaos—deep-throated yells, violent exhortations, giddy screams, hoarse whoops. The people in the stands lost all sight of who they were and what they were supposed to be like, all dignity and restraint thrown aside because of these high school boys in front of them, *their* boys, *their* heroes, upon whom they rested all their vicarious thrills, all their dreams. No connection in all of sports was more intimate than this one, the one between town and high school.

14 Based on paragraph 1, why did Winchell hate the moments spent in the field house before the game?

A. He felt distant from his classmates.

B. He did not want to have his picture taken.

C. He did not want to hear the coach's speech.

D. He felt the pressure of people's expectations.

15 Read the phrases from paragraphs 1 and 2 in the box below.

- . . . the minutes dripped away with excruciating slowness.
- . . . it was hard not to feel overwhelmed.
- They barely said anything to each other, . . .

What do the phrases help to establish?

A. the busyness of the town

B. the skill of the opponents

C. the dreariness of the setting

D. the tense mood of the excerpt

16 The description of Winchell at the pep rally emphasizes the contrast between

A. the ignorance of the crowd and his intelligence.

B. the confidence of the crowd and his pessimism.

C. the nastiness of the crowd and his good behavior.

D. the excitement of the crowd and his hidden emotions.

17 According to paragraph 6, why was it important that Winchell perform well in the game against the Rebels?

A. He could get revenge for an earlier loss.

B. He could make his parents proud of him.

C. He could show that he could play at a major university.

D. He could show his teammates that he deserved their trust.

18 Read the sentence from paragraph 9 in the box below.

> A series of meetings was held in the field house, the five Permian coaches trying to pound in the game plan against Lee one more time.

What does the sentence **mainly** reveal about the coaches?

A. how organized their meetings were

B. how different their personalities were

C. how focused they were on winning the game

D. how compassionate they were about the players

19 Based on the description in paragraph 11, the author thinks the game

A. is old-fashioned.

B. feels anticlimactic.

C. is similar to doing battle.

D. helps the players mature.

20 What strategy does the author use to allow the reader to get to know Winchell?

A. He includes comments from Winchell's friends.

B. He describes Winchell's behavior on the field.

C. He quotes newspaper articles about Winchell.

D. He describes what Winchell is thinking.

21 The word "incessant" in paragraph 4 is related to the verb "to cease." What is the meaning of *incessant* as it is used in the paragraph?

A. hurtful

B. unending

C. complicated

D. uninteresting

Question 22 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 22 in the space provided in your Student Answer Booklet.

22 Based on the excerpt, explain the connection between the Permian High School football team and the community. Support your answer with relevant and specific information from the excerpt.

John McPhee went to Florida to research the state's famous fruit and encountered some surprising attitudes about fresh orange juice and concentrate, which is made by adding water to frozen "concentrated" juice. Read this excerpt from Oranges *and answer the questions that follow.*

from ORANGES

by John McPhee

1 About a mile south of the Georgia-Florida line on U.S. 301, on a day as hot as summer although it was in fact the first day of spring, I stopped at the Florida Welcome Station to try some of the free orange juice that was proclaimed on a sign outside. A good-looking redheaded girl handed me a three-ounce cup of reconstituted concentrate. It was good concentrate, as I remember, but I felt a little nonplussed.[1] After driving for some hours, I found myself on Interstate 75 near Leesburg, in Lake County, where the Ridge begins. The Ridge is the Florida Divide, the peninsular watershed, and, to hear Floridians describe it, the world's most stupendous mountain range after the Himalayas and the Andes. Soaring two hundred and forty feet into the sub-tropical sky, the Ridge is difficult to distinguish from the surrounding lowlands, but it differs more in soil condition than in altitude, and citrus trees cover it like a long streamer, sometimes as little as a mile and never more than twenty-five miles wide, running south, from Leesburg to Sebring, for roughly a hundred miles. It is the most intense concentration of citrus in the world. The Ridge alone outproduces Spain and Italy. Its trees, planted in rows determined by surveyors' transits, are so perfectly laid out that their patterns play games with your eyes. The trees are dark and compact, like rows of trimmed giant boxwoods, usually about fifteen or twenty feet high. On the Ridge, as in the Indian River section of eastern Florida, citrus plantations are called groves; in California, they are generally called orchards. Citrus trees are evergreen, and in the ancient world they were coveted for their beauty long before anyone ever thought to eat their fruit. Of all the descriptions of them that I have ever run across, the one I prefer is contained in these three lines by an eighth-century Chinese poet:

> In the full of spring on the banks of a river—
> Two big gardens planted with thousands of orange trees.
> Their thick leaves are putting the clouds to shame.

The poet's name was Tu Fu, and he had so much confidence in his writing that he prescribed it as a cure for malaria. Beyond those three lines, I am unfamiliar with Tu Fu's canon.[2] But I believe in him. Or at least I did that morning at the beginning of the Ridge, where the orange trees were shaming the clouds, and the air was sedative with the aroma of blossoms. Valencia

[1] *nonplussed* — perplexed
[2] *canon* — body of literary work

trees, unlike all other orange trees, are in bloom and in fruit at the same time. So most of the trees in every direction were white and green and orange all at once.

2 After leaving Interstate 75, I noticed a sign on a roadside eating place that had originally said, "FRESH ORANGE JUICE"; the word "fresh" had been painted over with white paint but was still showing through. I dropped in briefly at the Florida Citrus Commission, in Lakeland, and was invited to have a cup of orange juice, which came out of a dispenser in the front lobby. It was concentrate.

3 While I was there, I heard the story of the day they first demonstrated the fresh-juice machine that was used in the Florida Pavilion at the 1964–65 New York World's Fair. The thing was set up in the Citrus Commission lobby, filled with fresh oranges, and switched on. As it began to split the oranges and squeeze out pitcher after pitcher full of fresh orange juice, word spread through the building, and employees of the Citrus Commission poured out of their offices and into the lobby, where they drank every drop the machine produced. The next day the machine was crated and sent to New York. People at the Citrus Commission were still talking about it more than a year later, and probably they still are. "Drinking that juice was a real novelty," one man told me. "It was a real party. Everybody was smiling."

4 In Winter Haven, which is on the Ridge and about equidistant from either end, I took a room in a motel on the edge of an orange grove. Next door was a restaurant, with orange trees, full of fruit, spreading over its parking lot. I went in for dinner, and, since I would be staying for some time and this was the only restaurant in the neighborhood, I checked on the possibility of fresh juice for breakfast. There were never any requests for fresh orange juice, the waitress explained, apparently unmindful of the one that had just been made. "Fresh is either too sour or too watery or too something," she said. "Frozen is the same every day. People want to know what they're getting." She seemed to know her business, and I began to sense what turned out to be the truth—that I might as well stop asking for fresh orange juice, because few restaurants in Florida serve it.

5 At the next table was a couple who overheard my exchange with the waitress and started a conversation with me. They told me that they lived in Plant City, a town about twenty miles away, and that they had an orange grove on their property, with three kinds of oranges, so that ripe fruit was on their trees almost eight months of the year. All year long, they said, they drank concentrate at breakfast. They hadn't made juice from the fruit on their trees for more than ten years.

6 After dinner, I drove downtown, and in a hardware store I found a plastic orange reamer on a bottom shelf. I bought a knife, too, and went back to the place on the edge of the orange grove. I picked several oranges, squeezed them, and poured the juice into a tall glass. I had what I wanted, but it had been a long day.

23 What is the **main** contrast the author develops in the excerpt?

A. the views of Tu Fu compared to modern Floridians

B. the height of the Ridge compared to the rest of Florida

C. the author's expectations compared to the reality of his experience

D. the author's feelings at the beginning compared to his feelings at the end

24 In paragraph 4, what is the purpose of noting that the restaurant is next to the orange trees?

A. to show how unpopulated this area of the state is

B. to show the beautiful scenery the orange grove provides

C. to show that restaurants often have their own orange groves

D. to show that it is realistic to expect the restaurant to have fresh juice

25 Based on the excerpt, why is concentrated orange juice **mainly** valued by the Floridians?

A. It is very sweet.

B. It is easy to make.

C. Its color is pleasing.

D. Its flavor is consistent.

26 Read the sentence from paragraph 1 in the box below.

> Citrus trees are evergreen, and in the ancient world they were coveted for their beauty long before anyone ever thought to eat their fruit.

Based on the sentence, *coveted* expresses which of the following states of mind?

A. need

B. desire

C. concern

D. boredom

Question 27 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 27 in the space provided in your Student Answer Booklet.

27 Read the last sentence of the excerpt.

> I had what I wanted, but it had been a long day.

Describe the frustrations the author encountered that caused it to be "a long day." Support your answer with relevant and specific examples from the excerpt.

English Language Arts

Reading Comprehension: Session 3

DIRECTIONS

This session contains two reading selections with twelve multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

Benjamin Franklin's achievements as a writer, statesman, and thinker are well known. However, this excerpt from a biography of Franklin focuses on him as a young man, before he became a major figure in American history. Read the excerpt and answer the questions that follow.

from Benjamin Franklin

by Edmund S. Morgan

Due to copyright restrictions, the image that accompanied this selection cannot be released to the public over the Internet.

1 The first thing to do is to overcome the image of a man perpetually at his desk, scribbling out the mountain of words that confronts us. Because Franklin wrote so well and so much it is natural to think of him with pen in hand. But the man we will find in his writings likes to be in the open air, walking the city streets, walking the countryside, walking the deck of a ship. Indoors, he likes to be with people, sipping tea with young women, raising a glass with other men, playing chess, telling jokes, singing songs.

2 Don't start with his first surviving writings, the labored compositions of a precocious[1] teenager, which he slyly introduced into his brother's newspaper under the facetious[2] name of Silence Dogood. Instead, meet an athletic young man on a sailing ship, headed back to America from his first trip to England. He had gone there in 1724 with glowing promises of support from the then governor of Pennsylvania, who turned out to be something of a con man. When the governor's promises failed him, Franklin had used his skills as a printer to make his living in London for a year and a half, enjoying the sights and sampling the temptations of the big city. Now, with this behind him and still only twenty years old, he has boarded ship for the voyage back to Philadelphia, ready for whatever comes his way.

3 The ship has stopped at the Isle of Wight, trapped there by contrary winds for several days. So young Franklin and some other passengers go ashore for a walk. Most of them stop for refreshment at a convenient tavern, but Franklin and two others keep going

[1] *precocious* — unusually mature for one's age
[2] *facetious* — playful

and make a hike of it. Overtaken by night they find they have to cross a tidal inlet to get back, and the owner of the only available boat refuses to stir from his bed to ferry them across. They decide to commandeer his boat, but it is moored to a stake that the incoming tide has surrounded, leaving the boat fifty yards from shore. Franklin strips to his shirt and wades out in the water and mud up to his waist but finds the boat chained and locked to a staple in the stake. He tries to wrench out the staple. No go. He tries to pull up the stake. No go. Back to shore, and the three start looking for a farmer's haystack to sleep in. But one of them has found a horseshoe. Maybe they can use it to pry the staple loose. Franklin is back in the water again, and this time he succeeds. He brings the boat ashore and they all climb aboard, but halfway across in the dark they stick in mud shallows. After breaking an oar and climbing out into the mud up to their necks, they finally drag the boat loose and use the remaining oar to paddle it to the opposite shore and tie it down. Muddy and wet, and perhaps a little shamefaced, they make their way back to their friends.

4 It was probably no accident that Franklin was elected to go into the water for the boat. This is a muscular young man, about five feet nine or ten, full of the energies . . . of youth. In the London print shop he keeps in shape by carrying a double weight of type forms up and down stairs. In his leisure hours he enjoys a form of exercise that few people of his time dared to try: he swims, and he is good at it. He makes the Thames his playground and shows off to friends on a boating excursion by jumping in and swimming from near Chelsea to Blackfriars, a distance of at least two miles, "performing on the Way many Feats of Activity, both upon and under water." Like many athletes, he put on weight when his life became more sedentary, and the multitude of Franklin portraits were all painted after he turned plump and middle-aged. . . . But think of him first in his twenties and thirties, on his feet and ready to go. On this voyage home, when they finally got a favorable wind and put to sea, Franklin amused himself by diving off and swimming around the ship. He never gave up his enjoyment of swimming and was still teaching timid friends how to do it when he was in his seventies. He even experimented with attaching paddles to his hands and feet, like modern skin divers, to step up his speed.

5 People at the time were under the illusion, as many still are, that getting cold and wet (swimming, walking in the rain, wearing damp clothes) was the way to "catch cold." There was not yet a germ theory of disease, but Franklin proved, to his own satisfaction at least, that people caught cold from one another and from "*too full Living* with too *little Exercise,*" not from being chilled. He found that he could spend two or three hours in the water with no ill effects. So get out of the house and enjoy the fresh air, let it rain. Even when he had to be indoors Franklin wanted fresh air and dismayed everyone by opening his window at night. On a political mission with future president John Adams, when they had to share a room for the night, the two quarreled (as they did about a great many things) over opening the window. Adams ungraciously fell asleep while Franklin continued to lecture him about the virtues of fresh air.

An Insatiable Curiosity

6 If we watch Franklin in the fresh air for a while, we quickly become aware of his most conspicuous virtue, the thing that would earn him world-wide fame in his own lifetime: his insatiable curiosity. There was more to see outdoors than in, and Franklin could not see anything without asking himself what it was, how it got that way, what made it tick. He had that rare capacity for surprise that has made possible so many advances in human knowledge, the habit of not taking things for granted, the ability to look at some everyday occurrence and wonder why. See him still on that voyage from London back to America. He watches everything that happens, including the sharks that keep him from swimming for a while, and he hooks up some seaweed and notices little heart-shaped yellowish lumps. He counts forty of them on a single strand of the weed. Examining them he finds that some have an opening "thrusting out a set of unformed claws, not unlike those of a crab, but the inner part was still a kind of soft jelly." Then he notices a tiny crab walking around and conjectures that all the lumps are embryo crabs. By keeping the seaweed in salt water and finding another smaller crab in it the next day, he convinces himself "that at least this sort of crabs are generated in this manner."

7 He did not pursue his study of pelagic[3] crabs, and since he was more often on land than at sea he found more things to wonder about there, but his travels kept him fascinated with water and its behavior, not only in the ocean but in rivers and lakes, even in jars and bottles. As we get to know him we find that his curiosity, once aroused, keeps him ever on the lookout. On another sea voyage he made himself an oil lamp to read by from a glass in which he floated the oil and a wick on water, hanging the glass from the ceiling of his cabin. Quickly he became more interested in the water and oil than in his book. As the ship rocked he noticed that the water was "in great commotion" compared to the oil. And after the oil burned away during the night to a thin film the water too stopped moving. Franklin as usual wondered why, and when he came ashore kept trying out the effects of differing amounts of oil on water. He could not explain what he found, and neither could learned friends he showed it to, who promised him that they would "consider it." They doubtless went home and quickly forgot what they had seen. But Franklin in a letter to a more sympathetic friend set down in a few words the attitude that made him what we would call a scientist. "I think it is worth considering," he said, "For a new appearance, if it cannot be explain'd by our old principles, may afford us new ones, of use perhaps in explaining some other obscure parts of natural knowledge."

8 Franklin never stopped considering things he could not explain. He could not drink a cup of tea without wondering why tea leaves gathered in one configuration rather than another at the bottom. He was always devising experiments to help him understand what he saw around him, but he made the whole world his laboratory.

[3] *pelagic* — living in open oceans or seas

28 What is the purpose of the author's challenges to the reader in the first sentences of paragraphs 1 and 2?

A. to show that his view of Franklin is unpopular

B. to encourage the reader to meet a new Franklin

C. to explain that Franklin is overrated as a scientist

D. to ensure that Franklin gets the respect he deserves

29 What is emphasized by the parallel structure in the second half of paragraph 1?

A. Franklin's wide variety of activities

B. Franklin's numerous shortcomings

C. Franklin's scientific aptitude

D. Franklin's skill as a writer

30 According to the excerpt, what is the **main** reason people think of Franklin as a scholarly man?

A. He enjoyed nature.

B. He traveled widely.

C. He wrote a great deal.

D. He worked as a printer.

31 Based on the excerpt, which of the following was the first step in Franklin's investigations?

A. theory

B. observation

C. library research

D. medical experiments

32 Which of the following sentences from the excerpt explains how Franklin "made the whole world his laboratory"?

A. "Franklin strips to his shirt and wades out in the water and mud up to his waist but finds the boat chained and locked to a staple in the stake."

B. "In his leisure hours he enjoys a form of exercise that few people of his time dared to try: he swims, and he is good at it."

C. "Even when he had to be indoors Franklin wanted fresh air and dismayed everyone by opening his window at night."

D. "There was more to see outdoors than in, and Franklin could not see anything without asking himself what it was, how it got that way, what made it tick."

33 In the excerpt, what is the effect of the author's use of the present tense?

A. It shows the relevance of Franklin's writings.

B. It brings Franklin's personality alive to the reader.

C. It makes the author's ideas about Franklin more believable.

D. It makes the author's ideas about Franklin seem controversial.

34 Read the sentence from paragraph 4 in the box below.

> Like many athletes, he put on weight when his life became more sedentary, and the multitude of Franklin portraits were all painted after he turned plump and middle-aged.

What is the meaning of the word *sedentary* as it is used in the sentence?

A. marked by little exercise

B. marked by intense stress

C. marked by serious illness

D. marked by intellectual boredom

35 In paragraphs 6 and 7, what is the purpose of the quotation marks?

A. to show that the words are Franklin's

B. to show that the statements are important

C. to provide another author's view of Franklin

D. to provide scientific explanations about crabs

Question 36 is an open-response question.

- **Read the question carefully.**
- **Explain your answer.**
- **Add supporting details.**
- **Double-check your work.**

Write your answer to question 36 in the space provided in your Student Answer Booklet.

36 Based on the excerpt, describe the character traits of Franklin that the author finds remarkable. Support your answer with relevant and specific information from the excerpt.

Youth is a time for learning life's lessons. Some of these lessons are more painful than others. Read what Adam learns about his father, Cyrus, in this excerpt from John Steinbeck's East of Eden *and answer the questions that follow.*

from East of Eden

by John Steinbeck

1 When a child first catches adults out—when it first walks into his grave little head that adults do not have divine intelligence, that their judgments are not always wise, their thinking true, their sentences just—his world falls into panic desolation. The gods are fallen and all safety gone. And there is one sure thing about the fall of gods: they do not fall a little; they crash and shatter or sink deeply into green muck. It is a tedious job to build them up again; they never quite shine. And the child's world is never quite whole again. It is an aching kind of growing.

2 Adam found his father out. It wasn't that his father changed but that some new quality came to Adam. He had always hated the discipline, as every normal animal does, but it was just and true and inevitable as measles, not to be denied or cursed, only to be hated. And then—it was very fast, almost a click in the brain—Adam knew that, for him at least, his father's methods had no reference to anything in the world but his father. The techniques and training were not designed for the boys at all but only to make Cyrus a great man. And the same click in the brain told Adam that his father was not a great man, that he was, indeed, a very strong-willed and concentrated little man wearing a huge busby.* Who knows what causes this—a look in the eye, a lie found out, a moment of hesitation?—then god comes crashing down in a child's brain.

3 Young Adam was always an obedient child. Something in him shrank from violence, from contention, from the silent shrieking tensions that can rip at a house. He contributed to the quiet he wished for by offering no violence, no contention, and to do this he had to retire into secretness, since there is some violence in everyone. He covered his life with a veil of vagueness, while behind his quiet eyes a rich full life went on. This did not protect him from assault but it allowed him an immunity.

4 His half-brother Charles, only a little over a year younger, grew up with his father's assertiveness. Charles was a natural athlete, with instinctive timing and coordination and the competitor's will to win over others, which makes for success in the world.

5 Young Charles won all contests with Adam whether they involved skill, or strength, or quick intelligence, and won them so easily that quite early he lost interest and had to find his competition among other children. Thus it came about that a kind of affection grew up between the two boys, but it was more like an

* *busby* — a tall fur hat worn by some people in the military

association between brother and sister than between brothers. Charles fought any boy who challenged or slurred Adam and usually won. He protected Adam from his father's harshness with lies and even with blame-taking. Charles felt for his brother the affection one has for helpless things, for blind puppies and new babies.

37 Based on paragraphs 1 and 2, why has the relationship between Adam and Cyrus changed?

A. Adam has become more withdrawn.
B. Adam has discovered Cyrus's faults.
C. Cyrus has decided to become less strict.
D. Cyrus has discovered Adam's failure at sports.

38 Based on paragraph 2, what is the reason for Cyrus's discipline?

A. to emphasize his own superiority
B. to force Charles to take care of Adam
C. to make up for his unhappy childhood
D. to build character in Adam and Charles

39 Based on paragraph 3, why is Adam well mannered?

A. to demonstrate respect for his father
B. to maintain calm in the household
C. to make his father like him better
D. to protect his younger brother

40 Based on paragraph 2, what does the "click in the brain" represent?

A. a moment of realization
B. a feeling of illness
C. Cyrus's voice
D. Adam's guilt

English Language Arts
Reading Comprehension Retest
March 2010 Released Items:
Reporting Categories, Standards, and Correct Answers*

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC)*
1	12	*Reading and Literature*	15	C
2	12	*Reading and Literature*	13	C
3	12	*Reading and Literature*	13	B
4	12	*Reading and Literature*	8	D
5	13	*Reading and Literature*	13	C
6	13	*Reading and Literature*	13	D
7	13	*Language*	4	B
8	13	*Language*	4	A
9	14	*Reading and Literature*	13	
10	16	*Reading and Literature*	14	B
11	16	*Reading and Literature*	14	A
12	16	*Reading and Literature*	14	D
13	16	*Reading and Literature*	14	C
14	20	*Reading and Literature*	13	D
15	20	*Reading and Literature*	15	D
16	20	*Reading and Literature*	13	D
17	20	*Reading and Literature*	13	C
18	21	*Reading and Literature*	13	C
19	21	*Reading and Literature*	15	C
20	21	*Reading and Literature*	13	D
21	21	*Language*	4	B
22	22	*Reading and Literature*	13	
23	25	*Reading and Literature*	11	C
24	25	*Reading and Literature*	13	D
25	25	*Reading and Literature*	8	D
26	25	*Language*	4	B
27	26	*Reading and Literature*	13	
28	30	*Reading and Literature*	11	B
29	30	*Reading and Literature*	15	A
30	30	*Reading and Literature*	8	C
31	30	*Reading and Literature*	13	B
32	30	*Reading and Literature*	13	D
33	31	*Reading and Literature*	15	B
34	31	*Language*	4	A
35	31	*Language*	5	A
36	32	*Reading and Literature*	13	
37	34	*Reading and Literature*	12	B
38	34	*Reading and Literature*	12	A
39	34	*Reading and Literature*	12	B
40	34	*Reading and Literature*	15	A

*Answers are provided here for multiple-choice items only.

III. Mathematics Retest

Mathematics Retest

The Mathematics retest was based on learning standards in the *Massachusetts Mathematics Curriculum Framework* (2000). The *Framework* identifies five major content strands, listed below.

- Number Sense and Operations
- Patterns, Relations, and Algebra
- Geometry
- Measurement
- Data Analysis, Statistics, and Probability

The grades 9–10 learning standards for these strands appear on pages 72–75 of the *Mathematics Curriculum Framework*, which is available on the Department website at www.doe.mass.edu/frameworks/current.html.

In test item analysis reports, Mathematics retest results are reported under five MCAS reporting categories, which are identical to the five *Mathematics Curriculum Framework* content strands listed above.

Test Sessions

The Mathematics retest included two separate test sessions, which were administered on consecutive days. Each session included multiple-choice and open-response items. Session 1 also included short-answer questions.

Reference Materials and Tools

Each student taking the Mathematics retest was provided with a Grade 10 Mathematics Reference Sheet and was allowed to refer to it at any time during testing. A copy of the reference sheet follows the final question in this chapter.

During session 2, each student had sole access to a calculator with at least four functions and a square root key. Calculator use was not allowed during session 1.

The use of bilingual word-to-word dictionaries was allowed for limited English proficient students only during both Mathematics retest sessions. No other reference tools or materials were allowed.

Cross-Reference Information

The table at the conclusion of this chapter indicates each item's reporting category and the framework learning standard it assesses. The correct answers for multiple-choice and short-answer items are also displayed in the table.

Mathematics

Session 1

You may use your reference sheet during this session.
*You may **not** use a calculator during this session.*

DIRECTIONS

This session contains fourteen multiple-choice questions, four short-answer questions, and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

1 What is the value of the expression below?

$$\frac{6^2}{3}$$

A. 2

B. 4

C. 9

D. 12

2 The first four terms of an exponential sequence are shown below.

$$-2,\ 4,\ -8,\ 16, \ldots$$

What is the 6th term in the sequence?

A. -64

B. -48

C. 48

D. 64

3 A gas station owner recorded the amounts of money, to the nearest dollar, that customers spent to buy gasoline between noon and 1:00 p.m. one day. The stem-and-leaf plot below shows the amounts.

Amounts Spent by Customers ($)

1	0 0 5 8 9
2	1 2 4 7
3	3 3 6 8
4	4 6
5	0 3
6	2

Key
3 | 8 represents 38

What was the median amount of money spent by customers?

A. $10

B. $27

C. $30

D. $52

4 Eleana and her grandfather both had birthdays last week.

- The sum of their ages is 100 years.
- Her grandfather's age is 4 times Eleana's age.

How old is Eleana?

A. 16 years
B. 20 years
C. 22 years
D. 25 years

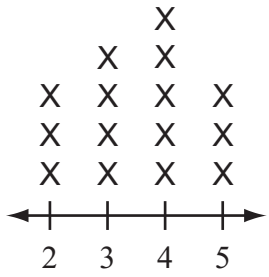
5 Which of the following is equivalent to the expression below?

$$\sqrt{36 + 64}$$

A. 10
B. 14
C. 50
D. 100

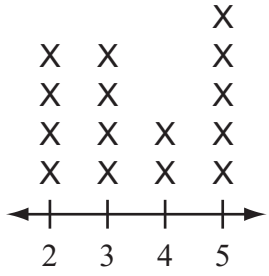
6 The line plots below show the number of inches each student's height increased one year for two different groups of students.

Group 1



Height Increase (inches)

Group 2



Height Increase (inches)

Which of the following statements is true for the height increases shown in the line plots?

A. Both the median and the mode are greater for Group 1 than for Group 2.
B. Both the median and the mode are greater for Group 2 than for Group 1.
C. The median is greater for Group 1, but the mode is greater for Group 2.
D. The median is greater for Group 2, but the mode is greater for Group 1.

7 Which of the following is equivalent to the expression below?

$$7^6 \cdot 7^3$$

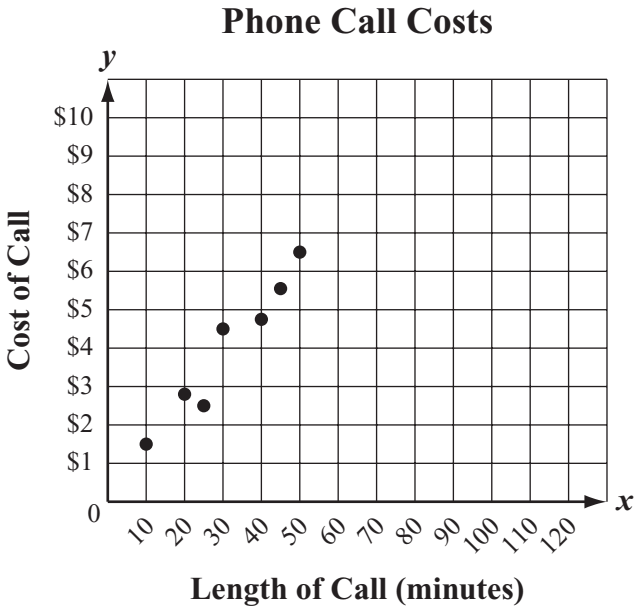
A. 7^2

B. 7^3

C. 7^9

D. 7^{18}

8 The scatterplot below shows the costs of phone calls of different lengths.



Based on the line of best fit for the scatterplot, which of the following is closest to the length of a call that costs $10?

A. 65 minutes

B. 80 minutes

C. 105 minutes

D. 120 minutes

9 Which of the following is equivalent to the expression below?

$$3(5k - 6) + 2(3k + 4)$$

A. $13k - 2$

B. $13k - 10$

C. $21k - 10$

D. $21k - 2$

10 The number 10 is 20% of what number?

A. 20

B. 30

C. 40

D. 50

11 The equation below can be used to approximate t, the amount of time in seconds that it takes an object to fall from a height, h, in feet.

$$t = \sqrt{\frac{h}{16}}$$

Based on the equation, which of the following is closest to the value of t when $h = 3200$?

A. 14 seconds

B. 28 seconds

C. 100 seconds

D. 200 seconds

12 The table below shows a quadratic relationship between values of x and y.

x	1	2	3	4	5
y	−2	1	6	13	22

Which of the following equations describes the relationship between x and y for the values in the table?

A. $y = x^2 - 4$
B. $y = x^2 - 3$
C. $y = 2x^2 - 4$
D. $y = 3x^2 - 11$

13 What is the value of the expression below when $x = -8$?

$$|2x + 3|$$

A. −19
B. −13
C. 13
D. 19

14 The heights of the members of a team are listed in the table below.

Heights of Team Members

Name	Height (inches)
Schwartz	71
Crowe	68
Gomez	78
Burke	73
Roberts	77
Jackson	75
O'Connor	80
Arroyo	75
Vien	68
Edwards	75

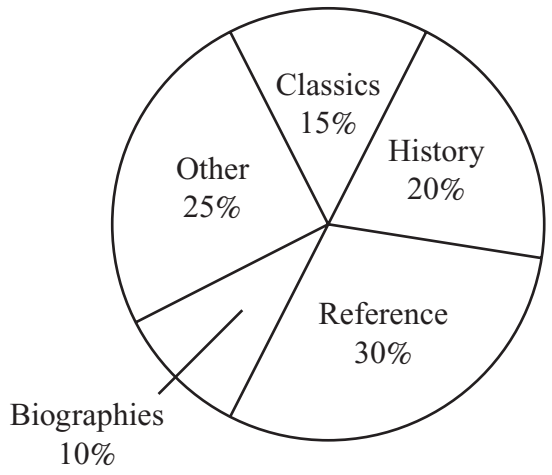
If Crowe leaves the team, which of the following measures of the heights will change?

A. mean
B. median
C. mode
D. range

Questions 15 and 16 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

15 The circle graph below shows the types of new books a librarian ordered.

New Library Books Ordered



The librarian ordered 40 biographies. What is the number of history books the librarian ordered?

16 The gas mileage, in miles per gallon, for each of eight cars is shown in the box below.

34,	22,	17,	26,	38,	30,	19,	30

What is the median gas mileage, in miles per gallon, of the cars?

Question 17 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 17 in the space provided in your Student Answer Booklet.

17 A video store sells DVDs. Each DVD costs $16, which includes tax.

a. What is the total cost of buying 5 DVDs at the video store? Show or explain how you got your answer.

b. Write an equation that represents y, the total cost of buying x DVDs at the video store.

The video store offers a club membership that allows customers to buy DVDs at a reduced cost. Customers can join the club by paying a one-time membership fee of $40. For each DVD that a club member buys, the cost is $12, which includes tax.

c. What is the total cost to a club member, including the membership fee, of joining the club and buying 5 DVDs? Show or explain how you got your answer.

d. Write an equation that represents y, the total cost to a club member, including the membership fee, of joining the club and buying x DVDs.

e. For what number of DVDs would the total cost of buying the DVDs **without** a club membership equal the total cost of joining the club and buying the DVDs **with** a club membership? Show or explain how you got your answer.

Questions 18 and 19 are short-answer questions. Write your answers to these questions in the boxes provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

18 Between what two consecutive whole numbers on the number line does $\sqrt{63}$ lie?

19 What is the solution of the equation below?

$$2x - 18 = 6$$

Questions 20 and 21 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 20 in the space provided in your Student Answer Booklet.

20 The dollar amounts of 20 gift cards sold at a store on Saturday are listed in the box below.

$25	$25	$50	$100	$60	$25	$30	$40	$50	$30
$50	$45	$20	$75	$50	$100	$25	$75	$25	$40

a. What is the range of the dollar amounts of the gift cards sold? Show or explain how you got your answer.

b. What is the mode of the dollar amounts of the gift cards sold? Show or explain how you got your answer.

c. What is the median dollar amount of the gift cards sold? Show or explain how you got your answer.

The manager calculated that the mean dollar amount of the 20 gift cards sold was $47. Then the manager discovered that two additional gift cards had been sold on Saturday for the amounts listed in the box below.

$70	$90

d. What was the mean dollar amount of all 22 gift cards sold on Saturday? Show or explain how you got your answer.

Write your answer to question 21 in the space provided in your Student Answer Booklet.

21 An arcade charges the same admission price for each person who enters the arcade. Inside the arcade, people buy sets of tokens, which they use to play the arcade games.

The sign below shows the price of admission and the price of a set of tokens at the arcade.

Arcade Prices

Admission $3
Set of tokens $2

a. What is the total price, in dollars, of 1 admission and 6 sets of tokens? Show or explain how you got your answer.

b. Joey has $25 to spend at the arcade on admission and sets of tokens. What is the greatest number of sets of tokens he can buy? Show or explain how you got your answer.

c. Write a linear equation that can be used to determine p, the total price, in dollars, of 1 admission and t sets of tokens.

d. Will an increase in the price of a set of tokens increase the slope of the line represented by the equation you wrote in part (c)? Explain your reasoning.

e. Will an increase in the price of a set of tokens increase the y-intercept of the line represented by the equation you wrote in part (c)? Explain your reasoning.

Mathematics

SESSION 2

You may use your reference sheet during this session.
You may use a calculator during this session.

DIRECTIONS

This session contains eighteen multiple-choice questions and three open-response questions. Mark your answers to these questions in the spaces provided in your Student Answer Booklet.

22 The weight of 2 gallons of water is approximately 16 pounds.

Based on this approximation, what is the weight of 15 gallons of water?

A. 100 pounds

B. 120 pounds

C. 160 pounds

D. 240 pounds

23 Two of the actual dimensions of Dwight's house are as follows:

- The length is 63 feet.
- The width is 35 feet.

Dwight made a scale drawing of his house. The length of the house in Dwight's drawing is 9 inches.

What is the width of the house in Dwight's drawing?

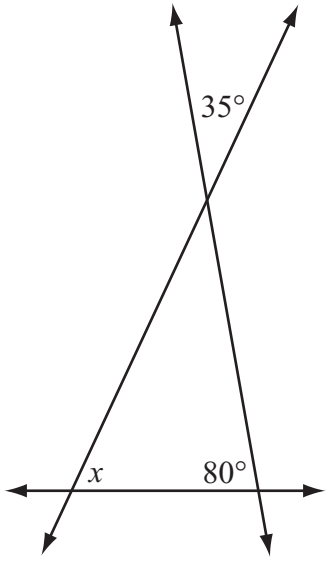
A. 2 inches

B. 4 inches

C. 5 inches

D. 7 inches

24 The diagram below shows three intersecting lines.



Based on the measurements in the diagram, what is x?

A. 65°

B. 80°

C. 100°

D. 115°

25 The diameter of a sphere is 8 inches. Which of the following is closest to the surface area of the sphere?

A. 50 square inches
B. 101 square inches
C. 201 square inches
D. 268 square inches

26 The statements below describe a number sequence.

- After the first term, each term in the sequence is found by multiplying the previous term by 4.
- The third term in the sequence is 96.

What is the first term in the sequence?

A. 6
B. 12
C. 24
D. 28

27 Which of the following pictures appears to have rotational symmetry?

A. 

B. 

C. 

D. 

28 Points $P(2, 9)$ and $Q(8, 7)$ are on a coordinate grid. What are the coordinates of the midpoint of $\overline{PQ}$?

A. $(3, 1)$

B. $(5, 8)$

C. $(6, 2)$

D. $(10, 16)$

29 Denise has the following pencils in a drawer:

- 5 blue pencils
- 3 green pencils

Denise took a blue pencil from the drawer and gave it to a friend. If she takes a second pencil from the drawer at random, what is the probability that the second pencil she takes will be **green**?

A. $\frac{1}{2}$

B. $\frac{3}{7}$

C. $\frac{3}{8}$

D. $\frac{1}{3}$

30 Marla uses two copiers to make copies of a one-page newsletter.

- Copier R makes 60 copies per minute.
- Copier T makes 40 copies per minute.

Marla will use both copiers to make a total of 1200 copies of the newsletter. Both copiers will start and end at the same time.

How many minutes will it take to make the 1200 copies?

A. 12 minutes

B. 20 minutes

C. 24 minutes

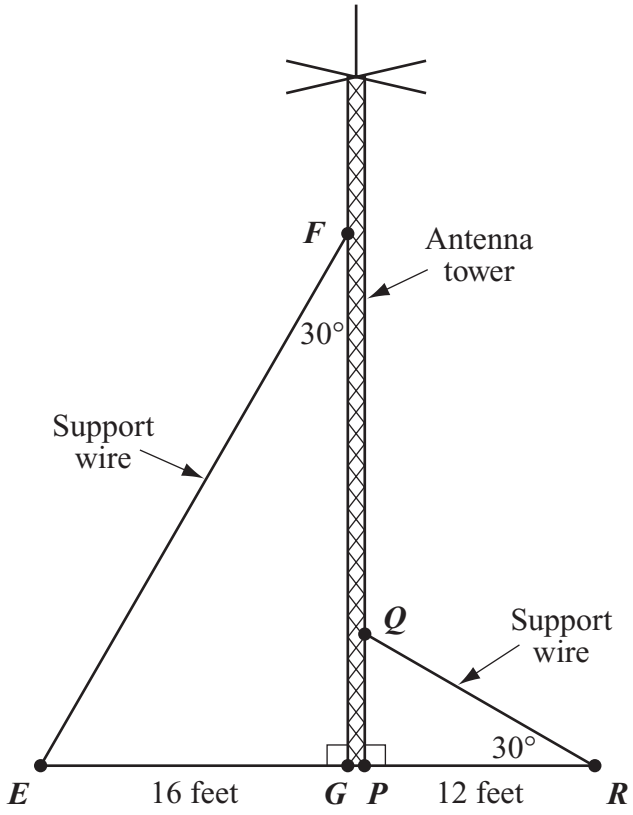
D. 30 minutes

Question 31 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 31 in the space provided in your Student Answer Booklet.

31 The diagram below shows the placement of two support wires for an antenna tower and some of the dimensions and angle measures resulting from their placement.



The length of $\overline{EG}$ is 16 feet. The length of $\overline{PR}$ is 12 feet.

a. What is the measure, in degrees, of $\angle E$? Show or explain how you got your answer.

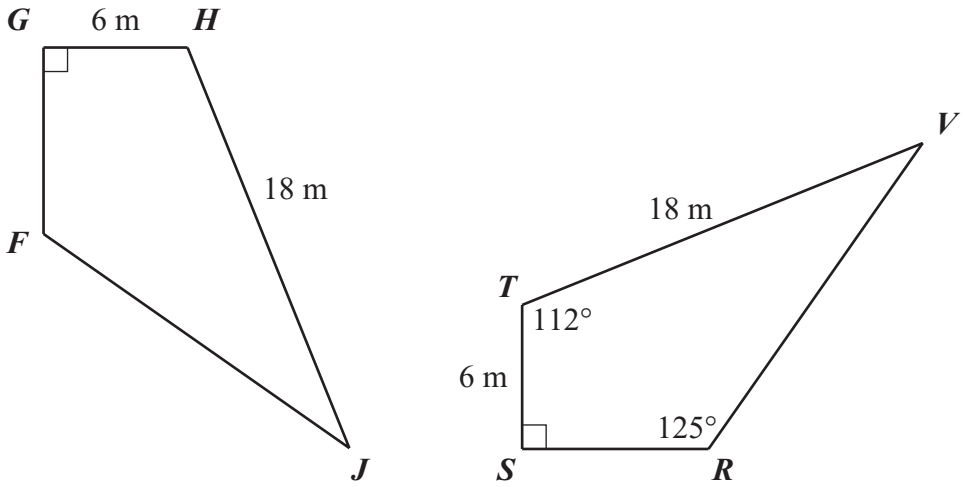
b. What is the length, in feet, of $\overline{EF}$? Show or explain how you got your answer.

c. What is the length, in feet, of $\overline{FG}$? Show or explain how you got your answer.

d. What is the length, in feet, of $\overline{QR}$? Show or explain how you got your answer.

Mark your answers to multiple-choice questions 32 through 40 in the spaces provided in your Student Answer Booklet. Do not write your answers in this test booklet. You may do your figuring in the test booklet.

32 In the diagram below, quadrilateral $FGHJ \cong$ quadrilateral $RSTV$.



Based on the measurements in the diagram, what is $m\angle F$?

A. 33°
B. 90°
C. 112°
D. 125°

---

33 A right rectangular prism has the following dimensions:

- The height is 5 feet.
- The length is 6 feet.

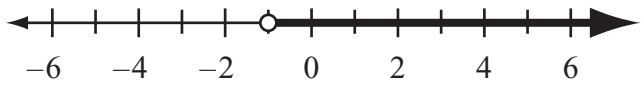
The volume of the prism is 60 cubic feet. What is the width of the prism?

A. 2 feet
B. 3 feet
C. 5 feet
D. 6 feet

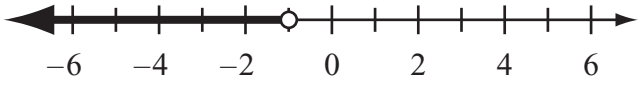
34 Which of the following graphs best represents the solution of the inequality below?

$$2x - 5 < 3$$

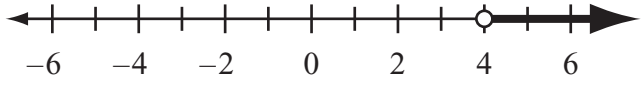
A.



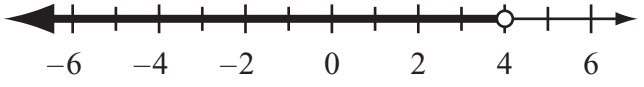
B.



C.



D.



35 A circle has a circumference of 16π inches. What is the radius of the circle?

A. 2 inches
B. 4 inches
C. 8 inches
D. 16 inches

36 Levar has two cubes of different sizes. The length of each edge of the larger cube is 3 times the length of each edge of the smaller cube.

The total surface area of the larger cube is how many times the total surface area of the smaller cube?

A. 6
B. 9
C. 27
D. 54

37 The directions on a container of plant food are shown in the box below.

> Mix 3 tablespoons of plant food with 4 gallons of water.

Every gallon of water requires the same amount of plant food. Based on the directions, what is the total number of tablespoons of plant food that should be mixed with 10 gallons of water?

A. 7.5
B. 12.0
C. 13.3
D. 30.0

38 A trapezoid has the following dimensions:

- The area is 28 square inches.
- The height is 4 inches.
- The length of one of the bases is 6 inches.

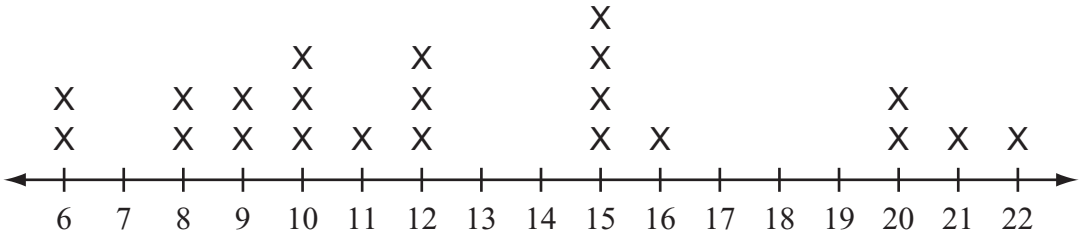
What is the length of the other base?

A. 1 inch
B. 8 inches
C. 16 inches
D. 18 inches

39 Which of the following figures does **not** have a rectangular cross section?

A. right circular cylinder
B. right triangular prism
C. right square pyramid
D. right circular cone

40 The line plot below shows the prices of books sold at a book sale.



Price of Each Book Sold ($)

What is the range of the prices of the books sold?

A. $12

B. $13

C. $15

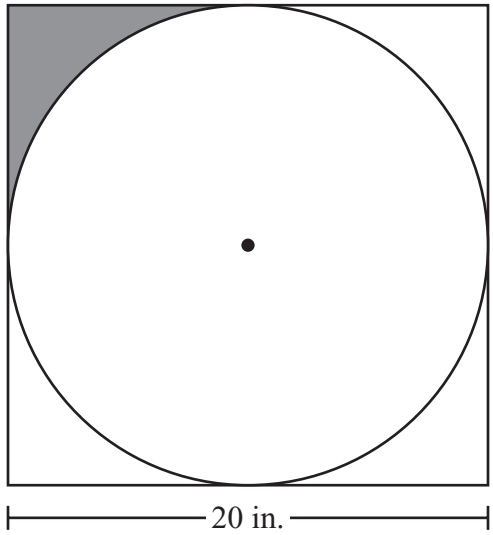
D. $16

Questions 41 and 42 are open-response questions.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF EACH QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Student Answer Booklet.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 41 in the space provided in your Student Answer Booklet.

41 The diagram below shows a circle inscribed in a square with side lengths of 20 inches.



a. What is the area, in square inches, of the square? Show your work.

b. What is the circumference, in inches, of the circle? Show your work.

c. What is the area, in square inches, of the circle? Show your work.

d. What is the area, in square inches, of the shaded region in the diagram? Show your work.

Write your answer to question 42 in the space provided in your Student Answer Booklet.

42 A small box of snack mix weighs 18 ounces and costs $4.32.

a. What is the cost per ounce of the snack mix? Show or explain how you got your answer.

The snack mix is also available in a large box that costs $6.60. The large box has a cost of $0.22 per ounce.

b. How many ounces does the large box of snack mix weigh? Show or explain how you got your answer.

For each box of snack mix, 1 serving of snack mix weighs 1.5 ounces.

c. How many servings of snack mix are contained in the small box? Show or explain how you got your answer.

d. How many servings of snack mix are contained in the **large** box? Show or explain how you got your answer.

e. How much money is saved on 60 servings of snack mix if the servings come from large boxes instead of small boxes? Show or explain how you got your answer.

Massachusetts Department of ELEMENTARY & SECONDARY EDUCATION

Massachusetts Comprehensive Assessment System
Grade 10 Mathematics Reference Sheet

AREA FORMULAS

square ..... $A = s^2$

rectangle ..... $A = bh$

parallelogram ..... $A = bh$

triangle ..... $A = \frac{1}{2}bh$

trapezoid ..... $A = \frac{1}{2}h(b_1 + b_2)$

circle ..... $A = \pi r^2$

LATERAL SURFACE AREA FORMULAS

right rectangular prism ..... $LA = 2(hw) + 2(lh)$

right circular cylinder ..... $LA = 2\pi rh$

right circular cone ..... $LA = \pi r\ell$
(ℓ = slant height)

right square pyramid ..... $LA = 2s\ell$
(ℓ = slant height)

TOTAL SURFACE AREA FORMULAS

cube ..... $SA = 6s^2$

right rectangular prism ..... $SA = 2(lw) + 2(hw) + 2(lh)$

sphere ..... $SA = 4\pi r^2$

right circular cylinder ..... $SA = 2\pi r^2 + 2\pi rh$

right circular cone ..... $SA = \pi r^2 + \pi r\ell$
(ℓ = slant height)

right square pyramid ..... $SA = s^2 + 2s\ell$
(ℓ = slant height)

VOLUME FORMULAS

cube ..... $V = s^3$
(s = length of an edge)

right rectangular prism ..... $V = lwh$

OR

$V = Bh$
(B = area of a base)

sphere ..... $V = \frac{4}{3}\pi r^3$

right circular cylinder ..... $V = \pi r^2 h$

right circular cone ..... $V = \frac{1}{3}\pi r^2 h$

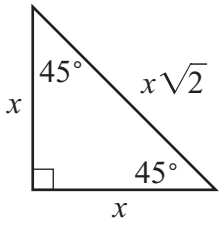
right square pyramid ..... $V = \frac{1}{3}s^2 h$

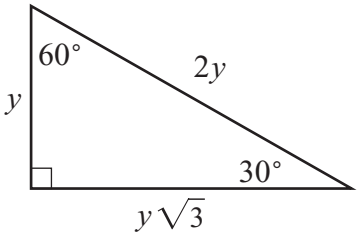
CIRCLE FORMULAS

$C = 2\pi r$

$A = \pi r^2$

SPECIAL RIGHT TRIANGLES





Mathematics Retest
March 2010 Released Items:
Reporting Categories, Standards, and Correct Answers*

Item No.	Page No.	Reporting Category	Standard	Correct Answer (MC/SA)*
1	38	*Number Sense and Operations*	10.N.2	D
2	38	*Patterns, Relations, and Algebra*	10.P.1	D
3	38	*Data Analysis, Statistics, and Probability*	10.D.1	C
4	39	*Patterns, Relations, and Algebra*	10.P.8	B
5	39	*Number Sense and Operations*	10.N.2	A
6	39	*Data Analysis, Statistics, and Probability*	10.D.1	C
7	40	*Number Sense and Operations*	10.N.1	C
8	40	*Data Analysis, Statistics, and Probability*	10.D.2	B
9	40	*Patterns, Relations, and Algebra*	10.P.3	C
10	40	*Number Sense and Operations*	8.N.10	D
11	40	*Number Sense and Operations*	10.N.3	A
12	41	*Patterns, Relations, and Algebra*	10.P.1	B
13	41	*Number Sense and Operations*	10.N.2	C
14	41	*Data Analysis, Statistics, and Probability*	10.D.1	A
15	42	*Data Analysis, Statistics, and Probability*	10.D.1	80
16	42	*Data Analysis, Statistics, and Probability*	10.D.1	28 miles per gallon
17	43	*Patterns, Relations, and Algebra*	10.P.8	
18	44	*Number Sense and Operations*	10.N.3	7 and 8
19	44	*Patterns, Relations, and Algebra*	10.P.6	$x = 12$
20	45	*Data Analysis, Statistics, and Probability*	10.D.1	
21	46	*Patterns, Relations, and Algebra*	10.P.7	
22	47	*Patterns, Relations, and Algebra*	10.P.7	B
23	47	*Number Sense and Operations*	8.N.3	C
24	47	*Geometry*	10.G.5	A
25	48	*Measurement*	10.M.2	C
26	48	*Patterns, Relations, and Algebra*	10.P.1	A
27	48	*Geometry*	10.G.1	C
28	49	*Geometry*	10.G.7	B
29	49	*Data Analysis, Statistics, and Probability*	8.D.4	B
30	49	*Patterns, Relations, and Algebra*	10.P.7	A
31	50	*Geometry*	10.G.6	
32	51	*Geometry*	10.G.4	D
33	51	*Measurement*	10.M.2	A
34	52	*Patterns, Relations, and Algebra*	10.P.6	D
35	53	*Measurement*	10.M.1	C
36	53	*Measurement*	10.M.3	B
37	53	*Number Sense and Operations*	8.N.3	A
38	54	*Measurement*	10.M.1	B
39	54	*Geometry*	10.G.10	D
40	55	*Data Analysis, Statistics, and Probability*	10.D.1	D
41	56	*Measurement*	10.M.1	
42	57	*Number Sense and Operations*	8.N.3	

*Answers are provided here for multiple-choice items and short-answer items only. Each open-response item has its own set of scoring guidelines, which allow for valid alternate interpretations and responses.