eMPowerME

STUDENT SAMPLE ITEM BOOKLET

2017

Mathematics
Reading
Writing & Language

Grade 7

MEA
Maine Educational Assessment

measured progress

Mathematics Session 1

Directions

Today you will take a test in mathematics. For this test, you will answer selected-response and constructed-response questions. Some of the questions may look different from test questions you have seen before, and some may ask about material that is new to you, but it is important to do your best. If you are not sure of the answer to a question, you should still try to answer it.

You may NOT use a calculator to answer the questions in this session.

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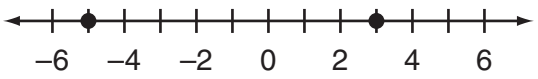
1. Two points are shown on this number line.



Which expression represents the distance between the two points?

A $|-5|-|3|$

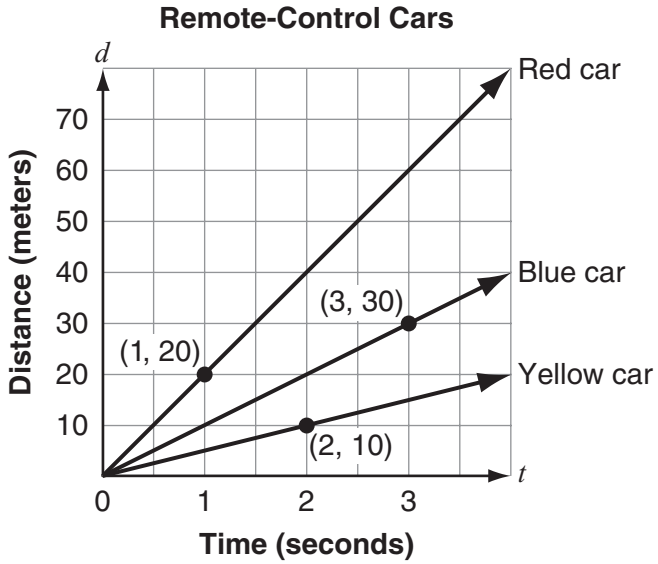
B $|3|-|-5|$

C $|-5-3|$

D $|3-5|$

Use the information below to answer questions 2 and 3.

Three friends race their remote-control cars around a racetrack. This graph shows the amount of time it takes each car to travel different distances around the racetrack.



2. Which statement **best** describes the point (1, 20) on the graph?

A The red car's average speed was $\frac{1}{20}$ meter per second.

B The red car's average speed was 20 meters per second.

C The red car's average speed was 1 meter per 20 seconds.

D The red car's average speed was 1 lap per 20 seconds.

3. The friends want to know which car has the greatest average speed.

Which statement about the graphed relationships is true?

A The red car has the greatest average speed because it is 5 meters per second faster than the blue car and 10 meters per second faster than the yellow car.

B The red car has the greatest average speed because it is 10 meters per second faster than the blue car and 15 meters per second faster than the yellow car.

C The blue car has the greatest average speed because it is 10 meters per second faster than the red car and 20 meters per second faster than the yellow car.

D The yellow car has the greatest average speed because it is 5 meters per second faster than the blue car and 15 meters per second faster than the red car.

GO ON

4. Four students conducted a survey about sports preferences at their middle school. Each student asked participants in their survey the same questions.

- Brian surveyed all the students in the school clubs.
- Ellen surveyed 10 different students in all of his classes that he had in the morning.
- Karter surveyed all the seventh graders who were eating sandwiches in the cafeteria at lunchtime.
- Olivia surveyed each fifth person from a list containing alphabetized names of the students in the school.

Which student's survey would **most likely** be representative of sports preferences at the school?

A Brian's survey

B Ellen's survey

C Karter's survey

D Olivia's survey

5. The length of a rectangle is 4 units more than 3 times its width.

a. Write an equation in terms of the width, w, that represents the perimeter, P, of the rectangle. Write your equation in its simplest form.

b. If the width of the rectangle is 10 units, what is the perimeter, in units? Show your work or explain how you know.

A second rectangle has a length of 15 units and a perimeter of 64 units.

c. What is the width, w, in units, of the second rectangle? Use an equation to show your work or explain how you know.

STOP

You have completed this session.

Mathematics Session 2

Directions

Today you will take a test in mathematics. For this test, you will answer selected-response and constructed-response questions. Some of the questions may look different from test questions you have seen before, and some may ask about material that is new to you, but it is important to do your best. If you are not sure of the answer to a question, you should still try to answer it.

You MAY use a calculator to answer the questions in this session.

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6. Cho left a 20% tip on her $25.70 dinner bill.

Which expression does **not** represent the total amount that Cho paid?

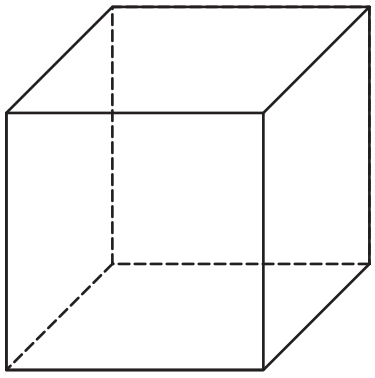
A $1.2(25.70)$

B $25.70\left(\frac{20}{100}\right)$

C $25.70 + 5.14$

D $25.70 + 25.70(0.2)$

7. Consider this cube.



Which figure **cannot** be created from a plane section of the cube?

A triangle

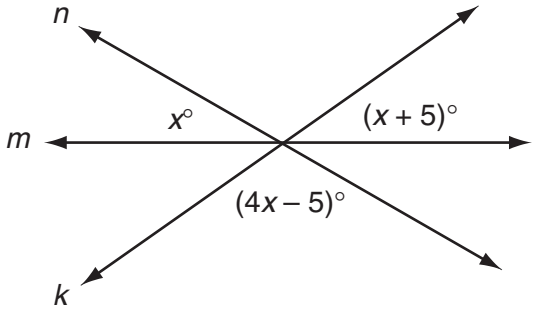
B hexagon

C octagon

D trapezoid

GO ON

8. In this diagram, lines *k*, *m*, and *n* intersect at a point.



Which equation can be used to find the value of *x*?

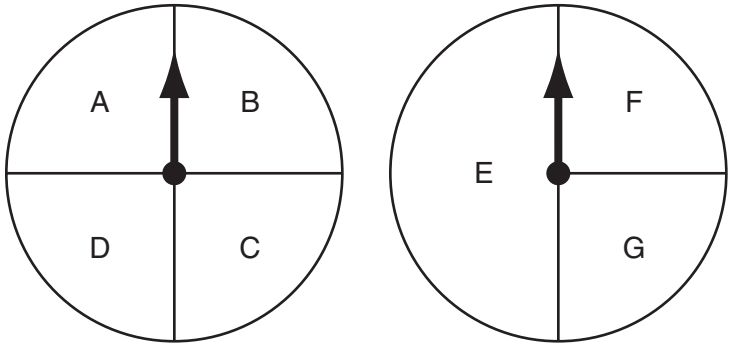
A $4x - 5 = x + 5$

B $4x - 5 = 2x + 5$

C $4x - 5 + x = 180$

D $4x - 5 + 2x + 5 = 180$

9. Dora has these two spinners.



Spinner 1 **Spinner 2**

Spinner 1 is divided into 4 equal sections. On spinner 2, the section labeled E has twice the area of section F and of section G. Dora spins the arrow on each spinner.

Which expression can be used to find the probability that the arrows stop on A and E?

A $\left(\frac{1}{4}\right)\left(\frac{1}{2}\right)$

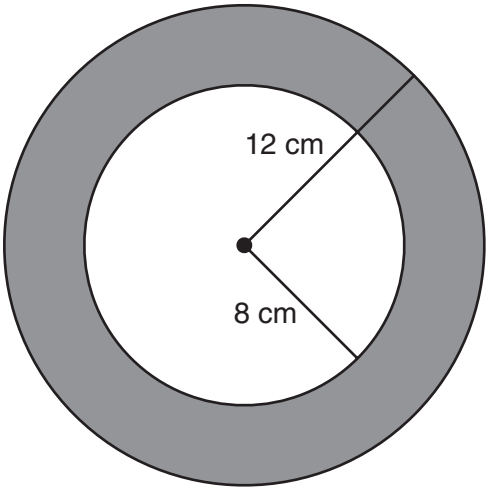
B $\left(\frac{1}{4}\right)\left(\frac{1}{3}\right)$

C $\left(\frac{1}{3}\right)\left(\frac{1}{2}\right)$

D $\left(\frac{1}{7}\right)\left(\frac{1}{7}\right)$

GO ON

10. Paul drew two circles. One circle has a radius of 8 centimeters and the other has a radius of 12 centimeters, as shown.



Paul says that the area of the shaded section between the two circles is 16π square centimeters because $A = \pi(12 - 8)^2 = 16\pi$.

a. Use words or numbers to explain the error that Paul made in his calculation.

b. What is the area, in square centimeters, of the shaded area between the two circles? Use 3.14 for π. Show your work or explain how you know.

STOP

You have completed this session.

Reading

Directions

Today you will take a test in reading. For this test, you will read passages and then answer questions about the passages. Some of the questions may look different from test questions you have seen before, and some may ask about material that is new to you, but it is important to do your best. If you are not sure of the answer to a question, you should still try to answer it.

You will now read two passages and answer the questions that follow. Some of the questions may ask you to compare the two passages.

Passage 1

The Last Lunar Footprint

1 He was the last person to walk on the Moon.

2 Astronaut Eugene Cernan was the commander of Apollo 17 when he became the last person to walk on the Moon. On December 11, 1972, Cernan navigated the lunar module *Challenger* to land at the Valley of Taurus-Littrow on the Moon. At the time, he knew that future moon missions had been cancelled. Over the course of his post-Apollo career until his death in 2017, Cernan often expressed dismay that no astronaut had been back to the Moon. It had been too long.

3 In 1972, Apollo 17 was launched for what would be NASA's last planned trip to the Moon. Cernan and fellow astronaut Harrison "Jack" Schmitt safely landed and conducted three successful space walks. During these walks, they conducted research and explored the moonscape, trekking nearly 22 total miles and collecting approximately 238 pounds of moon rock.

4 While on the Moon, Schmitt discovered what looked like orange glass. Cernan was doubtful. He did not accept that this substance should have been on the Moon. Could the glass from a light on the spacecraft have broken? Cernan looked more closely. Schmitt was right. He had, in fact, discovered orange regolith, or moon soil. The regolith turned out to be small pieces of orange glass, likely from a lunar volcano.

5 Before his final space walk was over, Cernan drove the lunar rover far from the *Challenger*. In the moon dust along the surface, he etched his daughter's initials: TDC. Since the Moon does not have an atmosphere or wind, the initials will likely remain there forever.

6 Cernan and his crew safely returned to Earth on December 19, 1972.

7 Cernan ended his autobiography, *The Last Man on the Moon*, with these mighty words: "Too many years have passed for me to still be the last man to have left his footprints on the Moon. I believe with all my heart that somewhere out there is a young boy or girl with indomitable will and courage who will lift that dubious distinction from my shoulders and take us back where we belong. Let us give that dream a chance."

8 Speaking on his legacy as the last person to walk on the Moon, Cernan said, "I've been tired of being called the end. Apollo 17 is not the end. It's just the beginning of a whole new era in the history of mankind."

GO ON

In this passage, the author imagines what NASA astronaut Eugene Cernan may have been thinking during his trip to the Moon.

Passage 2

Moonscape: Eugene Cernan's Story

1 *When I studied aeronautical engineering, I could only dream of space travel. Instead of "assessing the balance of structural loads" and "calculating temperatures in different atmospheric conditions" like I was expected to do, I would redirect my attention and stare up at the wonderment of the sky and what lay beyond. . . .*

2 I'd gotten close before, as the lunar module pilot of Apollo 10 back in May 1969.

3 So close.

4 In fact, I'd joke with Neil Armstrong (the first person to walk on the Moon—only two months later) that I'd painted a white line in the sky all the way to the Moon. All Armstrong had to do was follow the trail and land.

5 *But soon I'd be there.*

6 Now, three years later, as the commander of Apollo 17, I am orbiting 47,000 feet above the Moon, piloting the *Challenger* lunar module toward the Moon's cratered surface.

7 *Soon I'd be there.*

8 Spaceflight is like nothing else. There is no room for error. As commander, I have to get it right the first time; I focus on landing the *Challenger* without incident.

9 The initial descent is unexpectedly noisy. The spaceship is vibrating; Jack Schmitt and Ron Evans, the two other astronauts on the mission, are chattering quick and constant updates about pressure levels and coordinates; and the CAPCOM from ground control is radioing in, asking me to confirm the *Challenger*'s elliptical orbit speed. By the time I maneuver the spacecraft to about 80 feet above the surface of the Moon, it is so noisy that I can't think. I shout, "Jack, Ron, don't talk to me. I don't need the information you're giving me."

10 With stifling anxiety, my grip on the controls tightens, and I concentrate on what the *Challenger* is telling me, relying on the instincts I acquired in training.

11 Our landing in the Valley of Taurus-Littrow is tricky. Our entry is fast, and we need to slow down. I see lunar dust blowing all around us, kicked up by the unexpected presence of the *Challenger*. At about nine feet, I enable the surface probes to extend from the craft's footpads.

12 I radio, "We have contact light!"

13 Immediately, the engine is cut and we fall the last nine feet. There is a small bump, a near-soundless "poof," and then silence. I think it might be the most noiseless moment a human could experience: no vibration, no noise.

14 The chaotic fray of the descent is over. All that is left is the quiet realization that we are now in another world.

15 *I am here.*

GO ON

16 Jack and I connect the portable support backpacks to our spacewalking suits, put on our gloves and helmets, and harness safety tethers to our belts. *I am here.* I step out first and climb down the ladder.

17 *Armstrong may have made the first footprint on the Moon. But this is my first step.*

18 We take three separate moon walks on the Apollo 17 mission, each lasting about seven hours. Our mission objectives are completed on December 14, 1972. It is done.

19 I place my foot on the lunar ladder and radio to the crew, to ground control, and to America: "As I take man's last step from the surface, back home for some time to come (but we believe not too long into the future), I'd like to just say what I believe history will record: That America's challenge of today has forged man's destiny of tomorrow. And, as we leave the Moon at Taurus-Littrow, we leave as we came and, God willing, as we shall return: with peace and hope for all mankind."

20 Up the ladder I climb. I take with me an experience known to only 11 other people, and I leave behind what may be the last lunar footprint.

1. Which detail from Passage 1 shows that there is no air movement on the Moon?

A People have gathered unusual rocks on the Moon.

B Volcanic material is easily located on the Moon.

C Imprints in the soil remain undisturbed on the Moon.

D Astronauts sank into the soil when they walked on the Moon.

2. In paragraph 7 of Passage 1, Cernan uses the phrase "dubious distinction" to refer to

A a goal that was difficult to achieve.

B a special status that he did not want.

C an honor that he is proud to have received.

D an essential question that was left unanswered.

3. Based on paragraphs 1–4 of Passage 2, what effect did Cernan's role with NASA have on Neil Armstrong's accomplishments?

A Cernan completed a space mission that enabled Armstrong to land on the Moon.

B Cernan calculated the coordinates that helped guide Armstrong to the Moon.

C Cernan trained Armstrong to become the first man to land on the Moon.

D Cernan tested the same spacecraft that Armstrong flew to the Moon.

GO ON

This question has two parts. Be sure to answer both parts of the question.

4. Based on Passage 2, how did Cernan **most likely** feel when he landed on the Moon?

A joyous and celebratory

B surprised and concerned

C tired and overwhelmed

D amazed and relieved

Which choice provides the **best** evidence for the answer to the previous question?

A "I see lunar dust blowing all around us, kicked up by the unexpected presence of the *Challenger*."

B "Immediately, the engine is cut and we fall the last nine feet."

C "All that is left is the quiet realization that we are now in another world."

D "Jack and I connect the portable support backpacks to our spacewalking suits."

5. Analyze how the narration of "Moonscape: Eugene Cernan's Story" shows the profound effect the Apollo 17 mission had on Cernan. Use details from the passage to support your answer.

6. Which sentence **best** describes a central idea that is developed in **both** passages?

A The natural resources on the Moon could be beneficial to people on Earth.

B Eugene Cernan was the first person on the Moon to discover the Valley of Taurus-Littrow.

C Eugene Cernan and Jack Schmitt completed a successful mission to the Moon aboard Apollo 17.

D The success of past missions to the Moon suggests that space travel remains a top priority for the United States.

7. Analyze how reading the passage "Moonscape: Eugene Cernan's Story" can help the reader better understand the information presented in "The Last Lunar Footprint." Use details from **both** passages to support your analysis.

STOP

You have completed this session.

Writing & Language

Directions

Today you will take a test in writing and language. For this test, you will read passages and answer questions. Some questions might ask about how to improve the passage. Other questions might ask you to correct errors in the passage. Some of the questions may look different from test questions you have seen before, and some may ask about material that is new to you, but it is important to do your best. If you are not sure of the answer to a question, you should still try to answer it.

Read the passage. Then answer the questions that follow.

Volunteer for Better Health

1. William Shakespeare once wrote, "The meaning of life is to find your gift. **2.** The purpose of life is to give it away." **3.** The famous author's words get to the heart of why volunteering is very meaningful for many people.

4. Modern science indicates that volunteering is associated with lower rates of disease and can even extend life. **5.** In 2013, researchers at Carnegie Mellon University discovered that adults who repeatedly volunteered were less likely to have high blood pressure than adults who did no volunteering. **6.** This is significant, since high blood pressure is linked to serious illnesses. **7.** A different study, published in the journal *Health Psychology*, came to similar conclusions.

8. Researchers are not sure why volunteering has these effects. **9.** They think it is related to the fact that volunteering relaxes people. **10.** It also gives them a sense of purpose and connects them to others. **11.** All of these feelings have been found to have positive health benefits as well.

12. The health benefits of volunteering also apply to the mind. **13.** Volunteering has been shown to reduce angziety, sadness, loneliness, and a type of social pressure called stress. **14.** In part, this is because feel-good activities such as volunteering cause the brain to produce a chemical called dopamine. **15.** In large amounts, dopamine makes people feel happy and satisfied, and it produces other positive mental responses.

16. Of course, volunteering is not just good for the volunteers. **17.** It makes communities stronger, cleaner, and healthier places to live. **18.** Volunteers help other people feel a sense of belonging. **19.** To volunteer is to truly help oneself while helping others.

GO ON

This question has two parts. Be sure to answer both parts of the question.

1. The writer wants to add a sentence after sentence 3 to better introduce the topic. Which sentence would be the **best** to add?

A Shakespeare and others who lived hundreds of years ago knew that the most important part of volunteering was the way it gave people a sense of belonging.

B Today, researchers are trying to figure out the effect volunteering can have on dopamine levels in the brain.

C However, Shakespeare and others who lived hundreds of years ago might be surprised to learn that volunteering has important health benefits too.

D Today, researchers are trying to figure out why volunteering is so meaningful to people.

Which choice provides the **best** evidence for the answer to the previous question?

A "volunteering is associated with lower rates of disease and can even extend life."

B "Researchers are not sure why volunteering has these effects."

C "In part, this is because feel-good activities such as volunteering cause the brain to produce a chemical called dopamine."

D "Volunteers help other people feel a sense of belonging."

2. Based on the argument, what is the meaning of the word significant as it is used in sentence 6?

A famous

B important

C profitable

D weighty

3. Which choice, if added after sentence 7, would provide additional evidence that strengthens the writer's claim?

A This study found that people who were regular volunteers were less likely to be lonely and sad.

B This study found that people who were regular volunteers lived longer than those who were not.

C This study found that communities with high rates of volunteerism have lower crime rates.

D This study found that people with high blood pressure were more likely to become volunteers.

4. How should the underlined word in sentence 13 be spelled?

A anixety

B aniexty

C axiety

D anxiety

5. Which word in sentence 15 provides a clue to the meaning of the word mental?

A amounts

B dopamine

C feel

D other

6. Is sentence 19 an effective conclusion for this argument?

A Yes, because it returns to the opening idea of the argument.

B Yes, because it makes a strong counterclaim.

C No, because its style is different from the rest of the argument.

D No, because it introduces new evidence.

STOP

You have completed this session.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