

Name :

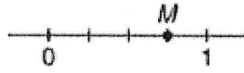
2020 AMI Grades 9-12 Mathematics

DAY #6

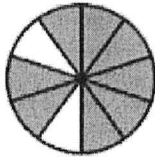
Question 1

Juliana divided the part of a number line from 0 to 1 into sections of equal length. She plotted point M on the number line, as shown below.

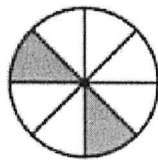
One of the following circles is shaded to represent a fraction that is equivalent to the number represented by point M . Which one?



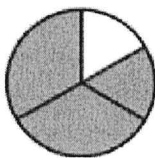
☐ A.



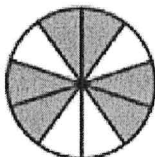
☐ B.



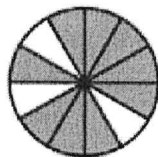
☐ C.



☐ D.



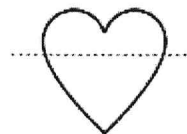
☐ E.



Question 2

Explain what a line of symmetry is.

Explain why the dashed line drawn in the figure below is NOT a line of symmetry for the figure.



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Question 3

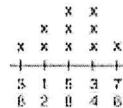
Liam is making chocolate chip cookies. The recipe calls for 1 cup of sugar for every 3 cups of flour. Liam has only 2 cups of flour.

- How much sugar should Liam use?
- Explain why your answer is correct.

Question 4

Angela's class placed 10 empty rain gauges on the playground Monday morning. The line plot below shows the number of inches of rainwater in each gauge after it rained Monday afternoon.

Number of Inches of Rainwater



What is the mean amount of rainwater per rain gauge, in inches, in the 10 rain gauges?

- Ⓐ $\frac{25}{80}$
- Ⓑ $\frac{3}{8}$
- Ⓒ $\frac{31}{80}$
- Ⓓ $\frac{37}{56}$
- Ⓔ $\frac{31}{8}$

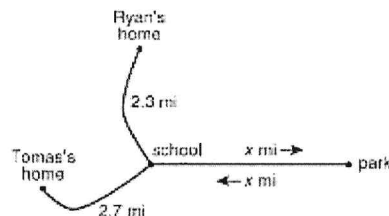
Question 5

Ryan and Tomas walked to school and then to the park, as described below.

Ryan walked 2.3 miles from his home to meet Tomas at school.

Tomas walked 2.7 miles from his home to meet Ryan at school.

Once they were at school, the boys walked x miles to the park and then x miles back to the school.



The sum of the distance Ryan walked and the distance Tomas walked was at least 16 miles but not more than 21 miles. One of the following is the graph of the possible values of x . Which one?

- Ⓐ
- Ⓑ
- Ⓒ
- Ⓓ
- Ⓔ

A mineral can often be distinguished from other minerals by its *composition* (the chemical elements that make up the mineral), by its *density* (the mass per unit volume of the mineral), or by its *hardness* (a value from 1 to 10; a mineral with a greater hardness value can scratch all minerals with lesser hardness values). The table below lists, for each of 5 minerals, the mineral name, composition, density at 25°C (in grams per cubic centimeter, g/cm³), and hardness.

Mineral name	Composition	Density at 25°C (g/cm ³)	Hardness
Chrysoberyl	beryllium, aluminum, oxygen	3.5–3.8	8.5
Fluorite	calcium, fluorine	3.1	4
Gypsum	calcium, sulfur, oxygen, hydrogen	2.3	2
Pyrite	iron, sulfur	5.0	6.5
Talc	magnesium, silicon, oxygen, hydrogen	2.8	1

9. According to the table, which of the following elements is NOT present in talc?
- A. Hydrogen
 - B. Magnesium
 - C. Oxygen
 - D. Sulfur
10. Consider two 5 g samples, one of fluorite and one of gypsum. Based on the table, which sample will have the greater volume at 25°C ?
- A. The fluorite, because it has the lower density.
 - B. The fluorite, because it has the higher density.
 - C. The gypsum, because it has the lower density.
 - D. The gypsum, because it has the higher density.
11. List TWO minerals described in the table that can scratch fluorite. Explain your answer citing specific numbers from the table for each of the minerals.
12. A student claimed that a sample of pyrite at 25°C with a volume of 10 cm³ would have a mass of 5 g. Use the explanation of density given in the passage to determine why the student's claim was INCORRECT. Be sure to show your work. As part of your response, give the actual mass of the 10 cm³ sample of pyrite.

Applying Usage Rules to Writing

Directions: Read the passage below, and then choose the word or group of words that belongs in each space.

Carol hurried to get the last of her thank-you notes finished. She (1) them all morning, and she hoped she (2) able to give them to the mail carrier, Bob, when he arrived. She signed the last one and sealed it just as Bob (3) up the steps to her door. She was surprised when he (4) a moment later and said, "You forgot to put stamps on them." Carol (5) heartily and put stamps on the envelopes. She gave them back to Bob, promising that she (6) quite as forgetful next time.

- 1 A write
B writing
C has written
D had been writing

- 2 A is
B was
C would be
D will be

- 3 A bounds
B bounded
C bounding
D is bounding

- 4 A return
B returned
C returning
D will return

- 5 A laughed
B laughs
C is laughing
D had laughed

- 6 A is not
B was not
C will not be
D would not be

Ever since I (1) thirteen, I (2) the stories and poems of Edgar Allan Poe. Last summer, I got to visit his Philadelphia home, which (3) into a museum. The room I remember best (4) the dark cellar. While standing in it, I wondered how Poe, who had such a vivid imagination, (5) to live in a house with such a creepy room. Maybe he (6) down there to get inspiration for his terrifying stories.

- 1 A is
B was
C were
D would be

- 2 A love
B loved
C have loved
D had loved

- 3 A renovate
B renovated
C is renovated
D has been renovated

- 4 A is
B will be
C be
D being

- 5 A bear
B bears
C can bear
D could bear

- 6 A creep
B creeps
C crept
D creeping

Ami Day 2

2020-03-23 10:00 AM

10:00 AM

10:00 AM

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Name: _____

Reading Comprehension

Context

Read the passage, and then answer the questions below it

Mrs. Auld was an apt woman, and the advice of her husband, and her own experience, soon demonstrated, to her entire satisfaction, that education and slavery are incompatible with each other. When this conviction was thoroughly established, I was most narrowly watched in all my movements. If I remained in a separate room from the family for any considerable length of time, I was sure to be suspected of having a book, and was at once called upon to give an account of myself. All this, however, was entirely too late. The first, and never to be retraced, step had been taken.

—My Bondage and My Freedom by Frederick Douglass

- 1 In this passage, the word apt means—
 A short
 B quick to learn
 C inept
 D sentimental
- 2 The word incompatible in this passage means—
 A intertwined
 B comfortable
 C in conflict
 D unreliable
- 3 In this passage, the word conviction means—
 A punishment
 B history
 C rumor
 D belief

- 4 In this passage, the word narrowly means—
 A closely
 B violently
 C enviously
 D blindly
- 5 The word considerable in this passage means—
 A thoughtful
 B outlandish
 C extended
 D abbreviated
- 6 The word retraced in this passage means—
 A refused
 B drawn again
 C undone
 D annexed

