MISSISSIPPI
DEPARTMENT OF
EDUCATION

Ensuring a bright future for every child

Grade 7 Mathematics

Sample Test Items

1. If $\frac{1}{8}$ of a fence is built in $\frac{2}{5}$ of an hour, how much of the fence will be completed in 1 hour?

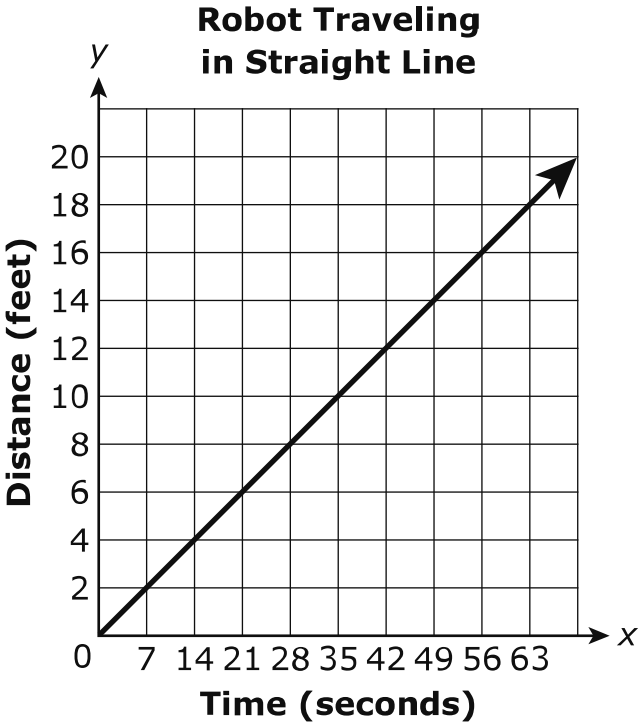
Ⓐ $\frac{1}{4}$

Ⓑ $\frac{5}{16}$

Ⓒ $\frac{1}{3}$

Ⓓ $\frac{21}{40}$

2. A robot travels 18 feet at a constant rate. A graph of its progress is shown.



Which value appears to be the constant of proportionality shown in the graph?

Ⓐ $\frac{1}{7}$

Ⓑ $\frac{2}{7}$

Ⓒ $\frac{1}{2}$

Ⓓ $\frac{7}{2}$

3. The total price of a DVD including 7% sales tax is $\$16.05$. What is the price of the DVD before the sales tax is added?

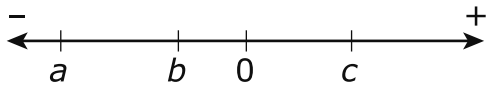
Ⓐ $\$14.00$

Ⓑ $\$14.93$

Ⓒ $\$15.00$

Ⓓ $\$15.98$

4. A number line is shown. The points a, b, and c represent the locations of rational numbers.



Which statements are true?

Select **two** answer choices.

Ⓐ The distance between a and c is $|a + c|$.

Ⓑ The distance between b and c is $|b - c|$.

Ⓒ The distance between a and b is equal to the distance between b and 0.

Ⓓ The location of the sum of a and b would be a distance of $|b|$ units to the left of a.

Ⓔ The location of the sum of a and b would be a distance of $|b|$ units to the right of a.

5. What is $\frac{8}{11}$ written as a decimal?

Ⓐ 0.72

Ⓑ $0.\overline{72}$

Ⓒ 1.375

Ⓓ $1.3\overline{75}$

6. What is the value of the expression $1.5 - 3\left(-3\frac{1}{2} + \frac{1}{2}\right)$?

Ⓐ -10.5

Ⓑ -7.5

Ⓒ 7.5

Ⓓ 10.5

7. Which expression is equivalent to $\frac{2}{5}(5x - 10) + 3x$?

Ⓐ $2x - 10$

Ⓑ $5x - 10$

Ⓒ $2x - 4$

Ⓓ $5x - 4$

8. The width of a rectangle is $\frac{4}{9}$ of the length. What is the perimeter of the rectangle when the width is 10 inches?

Ⓐ 4.4 inches

Ⓑ 10.4 inches

Ⓒ 20.9 inches

Ⓓ 65.0 inches

9. Sam wants to spend less than $\$25$ on his friend's gift. He buys a balloon for $\$4$. He then wants to purchase some baseball cards that cost $\$3$ each. Which represents the amount of baseball cards Sam can purchase?

Ⓐ 7 or fewer

Ⓑ fewer than 7

Ⓒ fewer than 8

Ⓓ 9 or fewer

10. A scale drawing of a billboard shows a rectangle with a length of 10 inches and a width of 5 inches. The area of the real billboard is 200 square feet. What is the scale factor used to make the drawing?

Ⓐ 1 in. $= 1$ ft.

Ⓑ 1 in. $= 2$ ft.

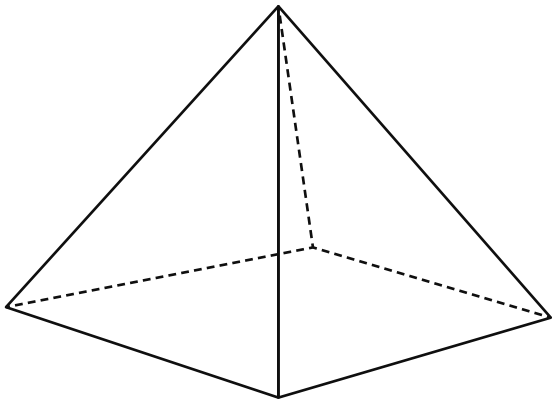
Ⓒ 1 in. $= 4$ ft.

Ⓓ 1 in. $= 12$ ft.

11. Given the measures of sides or angles provided in the table, select the boxes that determine whether a unique triangle, more than one triangle, or no triangle can be drawn.

	Unique Triangle	More Than One Triangle	No Triangle
angles measuring 70°, 10°, and 100°	○	○	○
angles measuring 40°, 35°, and 115°	○	○	○
sides measuring 4 cm, 6 cm, and 10 cm	○	○	○
sides measuring 10 ft., 12 ft., and 14 ft.	○	○	○

12. A right rectangular pyramid is shown.



What two-dimensional figure results from a slice perpendicular to the base **not** through the apex?

Ⓐ square

Ⓑ rhombus

Ⓒ rectangle

Ⓓ trapezoid

13. Johnnie needs to buy a circular pool cover. Pool covers cost $\$4.25$ per square foot. If the circumference of Johnnie's pool is 15π feet, **approximately** how much will the pool cover cost? Use 3.14 for π.

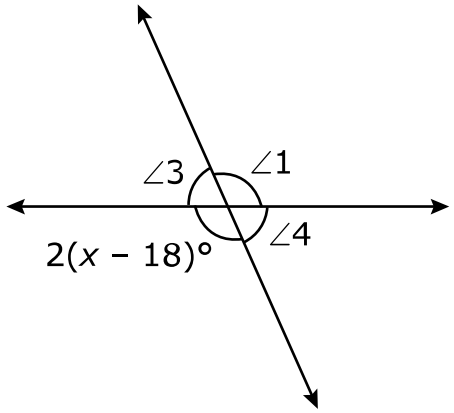
Ⓐ $\$47.10$

Ⓑ $\$239.06$

Ⓒ $\$750.66$

Ⓓ $\$3{,}002.63$

14. Two intersecting lines form four angles as shown in the diagram.



What is the value of x if $m\angle 3 = 66°$?

Ⓐ 66

Ⓑ 75

Ⓒ 114

Ⓓ 132

15. Jessie wants to conduct a school-wide survey to determine a theme for the upcoming school dance. There are 275 students in the school. Which method of sampling should Jessie use to **best** represent the school's population?

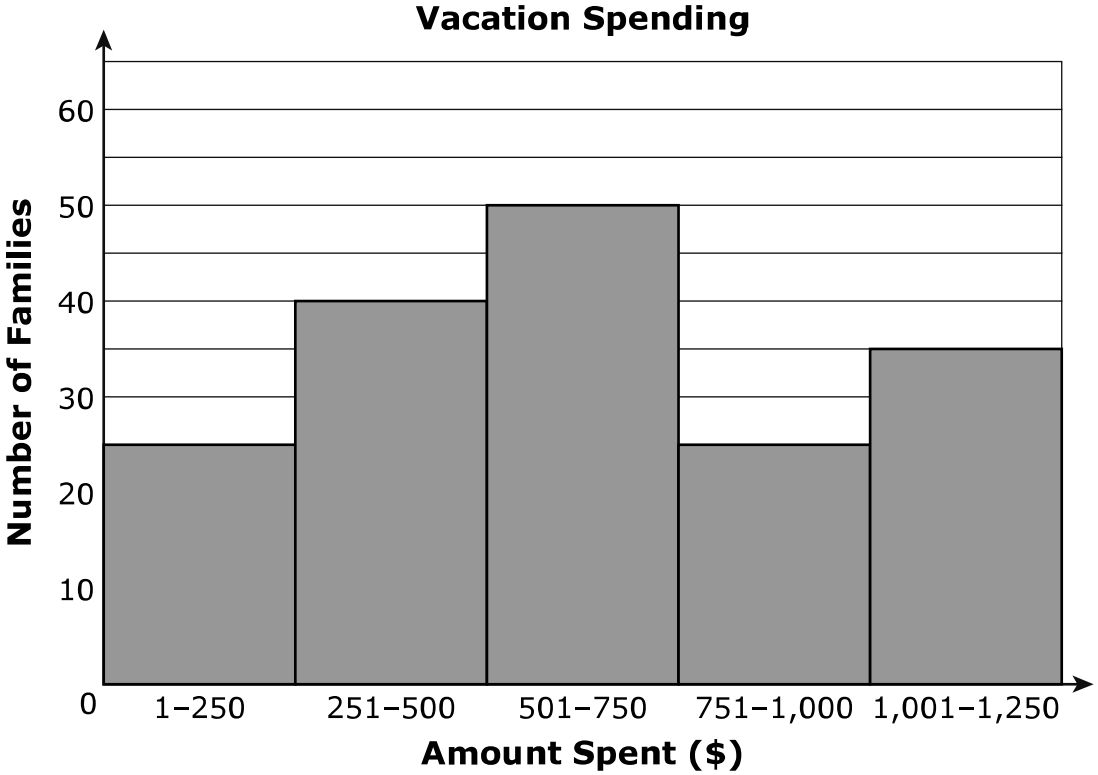
Ⓐ surveying the girls in the school

Ⓑ surveying the boys in the school

Ⓒ surveying 2 out of 5 students from one grade

Ⓓ surveying a randomly selected group of 100 students

16. Jordan is a travel agent. He surveyed a random sample of his clients to explore the amount of money families tend to spend while on vacation. The histogram shows the results.



What generalization can Jordan make based on the information found in the histogram?

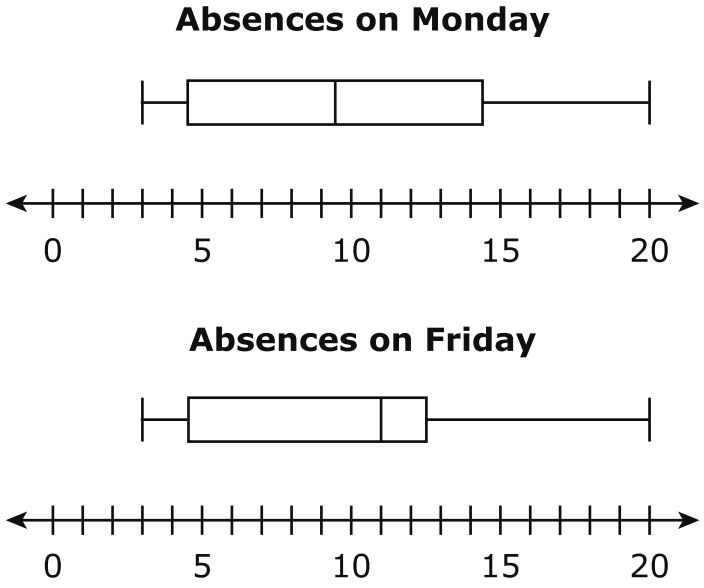
Ⓐ Most families spend more than $\$500$ while on vacation.

Ⓑ Most families spend between $\$501$ and $\$750$ while on vacation.

Ⓒ Approximately 20% of all families spend $\$250$ or less while on vacation.

Ⓓ Approximately half of all families spend less than $\$625$ while on vacation.

17. The box plots show the average number of student absences on Mondays and Fridays each month during one school year.



Which statement correctly compares the two data sets?

Ⓐ The median number of student absences on Mondays is equal to the median number of student absences on Fridays.

Ⓑ The median number of student absences on Mondays is 1.5 times more than the median number of student absences on Fridays.

Ⓒ The range of student absences on Fridays is more than 10 times greater than the difference between the median number of student absences on Mondays and Fridays.

Ⓓ The difference between the median number of student absences on Mondays and Fridays is equal to the difference between the interquartile range of student absences on Mondays and Fridays.

18. There are four different color tickets in a bag: red, white, blue, and yellow. The probability of pulling a red ticket is 0.28. The probability of pulling a white ticket is 12%. The probability of pulling a blue ticket is 0.4. The probability of pulling a yellow ticket is 20%. Which color ticket has a higher likelihood of being pulled?

Ⓐ red

Ⓑ white

Ⓒ blue

Ⓓ yellow

19. In each of these situations, items are chosen at random. Which situations have a probability of $\frac{2}{3}$?

Select **two** answer choices.

Ⓐ Susie has 24 spoons and 36 forks. What is the probability of her choosing a spoon?

Ⓑ Susie has 2 black pens and 3 red pens. What is the probability of her choosing a black pen?

Ⓒ Susie has 4 red chips, 16 pink chips, and 4 black chips. What is the probability of her choosing a pink chip?

Ⓓ Susie has 6 oranges, 6 apples, 12 peaches, 8 pears, and 4 strawberries. What is the probability of her choosing a peach, a pear, or a strawberry?

Ⓔ Susie has 12 black beans, 8 pinto beans, 7 red beans, and 9 lima beans. What is the probability of her choosing a black bean, a pinto bean, or a red bean?

20. A jelly bean is selected at random from a jar and is not returned. The jar contains 8 red, 2 green, 4 blue, and 7 pink jelly beans. Which is the probability of selecting a red jelly bean on the first draw and a blue jelly bean on the second draw?

Ⓐ $\frac{4}{7}$

Ⓑ $\frac{1}{70}$

Ⓒ $\frac{8}{105}$

Ⓓ $\frac{32}{441}$

Grade 7 Math Sample Test Items
Paper-Pencil Answer Key Document

Sequence	Key	Standard	Possible Points
1	B	7.RP.1	1
2	B	7.RP.2	1
3	C	7.RP.3	1
4	B,D	7.NS.1	1
5	B	7.NS.2	1
6	D	7.NS.3	1
7	D	7.EE.1	1
8	D	7.EE.3	1
9	B	7.EE.4	1
10	B	7.G.1	1
11	2,6,9,10	7.G.2	2
12	D	7.G.3	1
13	C	7.G.4	1
14	B	7.G.5	1
15	D	7.SP.1	1
16	A	7.SP.2	1
17	C	7.SP.3	1
18	C	7.SP.5	1
19	C,D	7.SP.7	1
20	C	7.SP.8	1