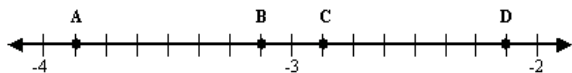


MSA Review
Grade 7

1

Look at the number line below.



What point represents the value of $-3\frac{1}{8}$?

- A. Point A
- B. Point B
- C. Point C
- D. Point D

2

This problem is solved without a calculator.

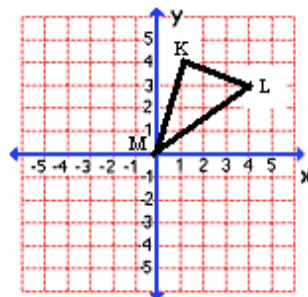
$$m - \frac{4}{25} = \frac{1}{2}$$

What value for m makes this equation correct?

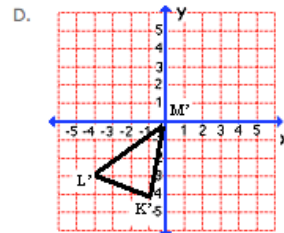
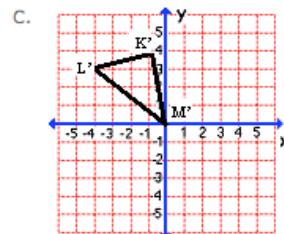
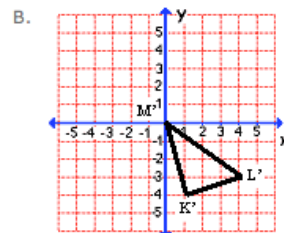
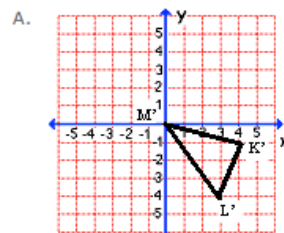
- A. $\frac{17}{50}$
- B. $\frac{9}{25}$
- C. $\frac{33}{50}$
- D. $\frac{21}{25}$

3

Look at triangle KLM on the coordinate plane below.

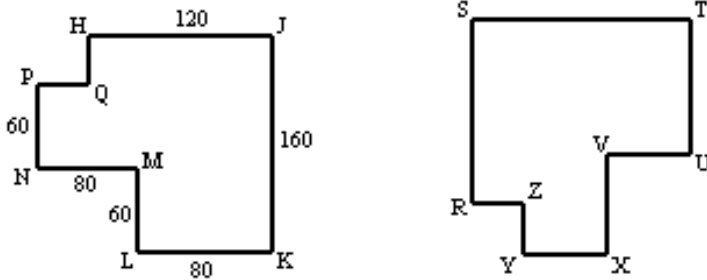


Which coordinate plane shows a reflection of triangle KLM over the X-axis.



4

Polygon HJKLMNPQ is congruent to polygon RSTUVXYZ.



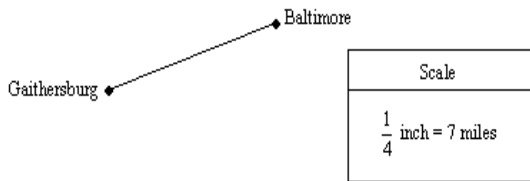
Note: The figures are not drawn to scale.

What is the length, in units, of segment RZ?

- A. 40 units
- B. 60 units
- C. 80 units
- D. 120 units

5

The figure below represents the distance between Gaithersburg and Baltimore.

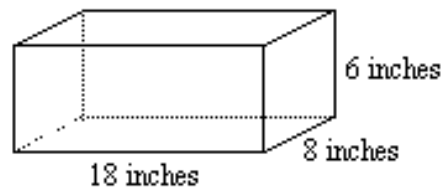


What is the distance, in miles, between Gaithersburg and Baltimore?

- A. 35
- B. 42
- C. 49
- D. 56

6

What is the total surface area, in square inches, of the rectangular box shown below?



Note: The figure is not drawn to scale.

- A. 64
- B. 300
- C. 600
- D. 864

7

This problem is solved without a calculator.

Look at the expression below.

$$6^4 \times 6^2$$

Which of the numbers below has the same value as the expression?

- A. 6^2
 B. 6^6
 C. 6^8
 D. 6^{42}

8

Della wants to list the numbers below in order from least to greatest.

$$0.714 \quad 26\% \quad \frac{7}{60} \quad \frac{38}{75}$$

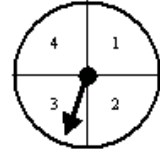
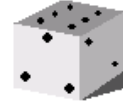
Which of the lists below shows the numbers in order from least to greatest.

- A. $\frac{7}{60}$ 26% $\frac{38}{75}$ 0.714
 B. 0.714 26% $\frac{7}{60}$ $\frac{38}{75}$
 C. $\frac{7}{60}$ $\frac{38}{75}$ 0.714 26%
 D. 0.714 $\frac{7}{60}$ 26% $\frac{38}{75}$

9

Edward conducts a simulation using a coin, a number cube, and a spinner, as shown below.

spinner, as shown below.



What is the number of outcomes for his simulation?

- A. 3
 B. 8
 C. 12
 D. 48

10

To get dressed, Melanie randomly chooses a blouse from her dresser drawer. Then, she randomly chooses a blue skirt from her closet. Melanie has a $\frac{2}{9}$ probability of being in a blue blouse and blue skirt.

Which blouses does Melanie have in her dresser drawer, and which skirts in her closet, to result in a probability of $\frac{2}{9}$?

- A. Drawer - 2 blue blouses and 1 black blouse
 Closet - 1 red skirt, 1 green skirt, and 1 black skirt
 B. Drawer - 2 blue blouses and 1 red blouse
 Closet - 2 blue skirts and 1 brown skirt
 C. Drawer - 1 blue blouse, 1 green blouse, and 1 red blouse
 Closet - 2 blue skirts and 1 red skirt
 D. Drawer - 1 blue blouse, 1 red blouse, and 1 green blouse
 Closet - 1 black skirt, 1 brown skirt, and 1 blue skirt

11

The data below shows the prices, in thousands of dollars, of 15 homes in the same neighborhood.

25	51	52	63	65
65	69	72	75	77
81	82	83	85	91

What is the median price, in thousands of dollars, of these homes?

- A. 65
- B. 69
- C. 72
- D. 75

13

An ice-skating rink charges a special rate on Wednesday nights. The special rate includes a one-time charge of \$1 to rent skates plus \$ 2 per hour to skate. The function table below shows the relationship between the number of hours a person skates and the total cost.

Number of Hours	Total Cost
1	3
3	7
5	11
6	?

What is the total cost, in dollars, to skate for 6 hours?

- A. \$ 2
- B. \$ 6
- C. \$ 12
- D. \$ 13

12

The leading major league home run hitters of 2002 season are displayed on the back-to-back stem-and-leaf plot below. The stem-and-leaf plot has an error.

Top Ten Home Run Hitters of 2002

American League		National League
3 3 4 4 8 9	3	4 5 7 7 8 9
1 3	4	2 2 6 9
2 7	5	.

3 | 4 = 43 home runs

4 | 2 = 42 home runs

Which sentence best describes the error in the stem-and-leaf plot?

- A. The stem-and-leaf plot should have only one key.
- B. The digits on the left side of the plot are in the wrong order.
- C. The key for the American League is incorrect.
- D. The digits should be shown only once to show repeated numbers in a data set.

14

Sarah opens a new checking account. She deposits \$ 5 each week and pays a one-time charge of \$ 7 to have her checks printed. The table below shows the relationship between the number of weekly deposits Sarah makes and the total amount of money she has in her checking account.

Number of Weekly Deposits	Total Amount of Money in Account
3	\$143
4	\$193
7	\$343
9	?

- A. \$ 387
- B. \$ 393
- C. \$ 443
- D. \$ 457

15

The linear relationship shown in the table below uses the rule $y = 3(x-2)$.

x	y
2	0
3	3
4	6
10	24

What is the value of y when x equals 20?

- A. 18
- B. 54
- C. 58
- D. 60

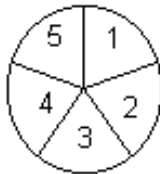
17

Alan tosses a quarter and then rolls a six-sided number cube. What is the total number of outcomes for this event?

- A. 8
- B. 10
- C. 12
- D. 36

16

Paloma flips a coin and then spins the arrow on the spinner.



What is the total number of outcomes for this event?

- A. 7
- B. 10
- C. 15
- D. 25

18

Jose needs to pick a golf ball and golf club. He has 3 white golf balls and 1 yellow golf ball. Jose has 3 black-handled golf clubs and 2 yellow-handled golf clubs. What is the probability that he randomly selects a yellow golf ball and a yellow-handled golf club?

- A. 10%
- B. 25%
- C. 40%
- D. 50%

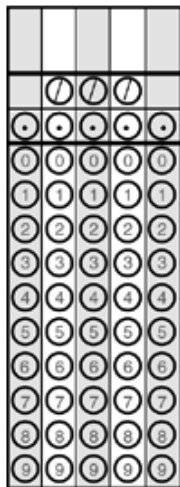
19

The local weather report states that the probability of snow today is 10% and snow tomorrow is 30%. What is the probability that it will snow today and tomorrow?

- A. .03
- B. .10
- C. 10
- D. 30

20

Sheila buys tee shirts for the soccer team. The cost is \$ 133.00 for 14 tee shirts. What is the unit rate, in dollars, for the cost of the tee shirts?



21

Michael wins a prize if he spins and lands on blue. Each spinner is divided into 6 equal sections. Which spinner gives Michael the greatest chance of winning a prize?

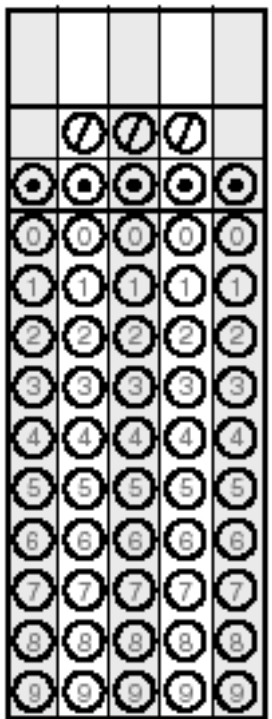


- A. Blue, Red, Red, Yellow, Yellow, Yellow
- B. Blue, Red, Blue, Yellow, Blue, Red
- C. Blue, Blue, Blue, Blue, Red, Yellow
- D. Red, Red, Blue, Yellow, Yellow, Blue

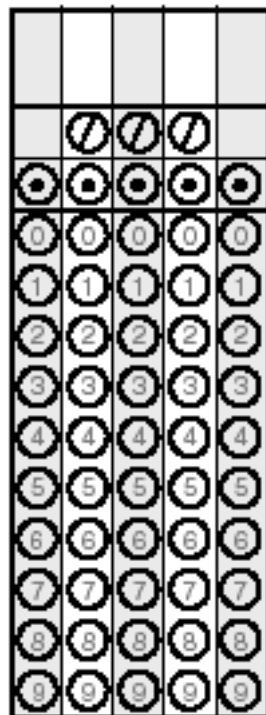
Roger rents a power washer to clean his deck. The total cost includes a one-time rental fee of \$15 plus \$14 for each hour. The table below shows the relationship between the number of hours Roger rents the power washer and the total cost of a rental.

Number of Hours	Total Cost
1	\$29
3	\$57
4	\$71
6	?

What is the total cost of the power washer rental for 6 hours?



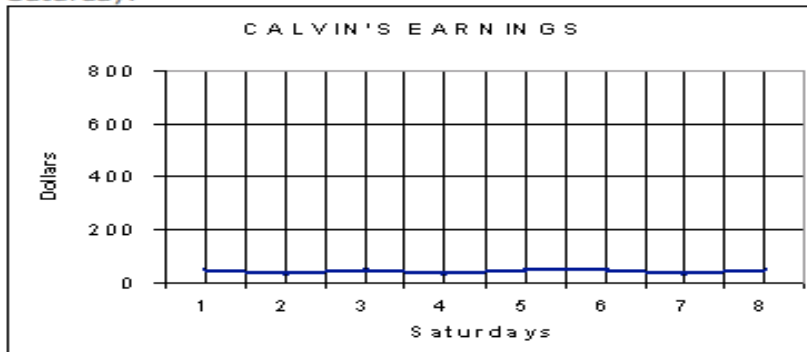
What is the total number of outcomes for picking a card from a group of 6 cards labeled A, B, C, D, E, and F, tossing a coin and rolling a number cube?



Calvin mows his neighbors' lawns on Saturdays. The data below shows the amount of money that Calvin earned for the last 8 Saturdays.

Saturday	1	2	3	4	5	6	7	8
Dollars	50	40	45	40	45	50	40	45

The line graph below displays the data for Calvin's earnings. The way that the line graph was created leads to an incorrect interpretation of the data that Calvin earned the same amount of money every Saturday.



Step A – What part of the line graph leads to an incorrect interpretation of the data that Calvin earned the same amount of money every Saturday?

Step B - Use what you know about line graphs to justify why the part of the graph you identified in Step A leads to an incorrect interpretation of the data. Use words, data, and/or symbols in your justification.

The linear relationship in the table below uses the rule $y = 6x + 20$.

x	y
5	50
13	98
45	290
80	?

Step A – What is the value for y when $x = 80$?

Step B – Explain how you determined this value. Use what you know about function tables in your explanation. Use words, numbers, and/or symbols in your explanation.

The list below shows the different taco shells, fillings, and toppings sold at Rico's Taco Bar.

Taco Shells

Hard

Soft

Fillings

Chicken

Beef

Bean

Toppings

Cheese

Lettuce

Salsa

Onions

Sour Cream

Step A- How many different types of tacos can Rico make using one taco shell, one filling and one topping?

Step B - Use what you know about probability to justify why the number of different types of tacos you determined is correct. Use words, numbers, and/or symbols in your justification.

Juan has 5 pairs of socks in his drawer. The pairs of socks are: 3 white and 2 blue. He also has 4 T-shirts in the drawer: 2 white and 2 gray. He randomly picks one pair of socks and one T-shirt from the drawer.

Step A

What is the probability Juan picks a pair of white socks and a gray T-shirt?

Step B

Use what you know about probability to explain how you determined the probability of Juan picking a white pair of socks and a gray T-shirt. Use words, numbers, and/or symbols in your justification.

This problem is solved without a calculator.

Amanda's long distance telephone plan charges a monthly fee of \$ 14.95 and a \$ 0.05 per minute for the number of minutes (m) that she uses her telephone. The monthly charges for Amanda's long distance telephone plan is represented by the expression below.

$$14.95 + 0.05m$$

Step A

How much is the monthly charge for Amanda's long distance telephone plan if she talks for 150 minutes in one month?

Step B

- Use what you know about expressions to explain how you determined the monthly charge for Amanda's long distance telephone plan. Use words, numbers, and/or symbols in your explanation.
- Suppose that the cost per minute changes to \$ 0.07 per minute. Explain how this change will affect the charge for Amanda's telephone plan. Use words, numbers, and/or symbols in your explanation.