

Name: _____ Class: _____ Date: _____

Math Course 2 - Unit 3 - Version B - Print

1

On her math exam, Alicia answered 25 questions correctly and 5 questions incorrectly. Which of the following represent the ratio of correct answers to incorrect answers?

Select all that apply.

- 25 : 5
 $\frac{25}{5}$
 5 to 25
 $\frac{5}{25}$
 5 : 1
 $\frac{5}{1}$

2

A dolphin can swim 6 miles in 2 hours. What is the unit rate, in miles per hour, that a dolphin can swim?

- A) $\frac{1}{3}$ mph
 B) 1 mph
 C) 3 mph
 D) 12 mph

3

Luciano can type 190 words in 5 minutes. Which of the following ratios are in a proportional relationship with Luciano's typing speed?

Select all that apply.

- $\frac{38}{1}$
 $\frac{74}{2}$
 $\frac{230}{45}$
 $\frac{290}{105}$
 $\frac{570}{15}$
 $\frac{950}{25}$

4

The speed of a passenger train is shown in the table below.

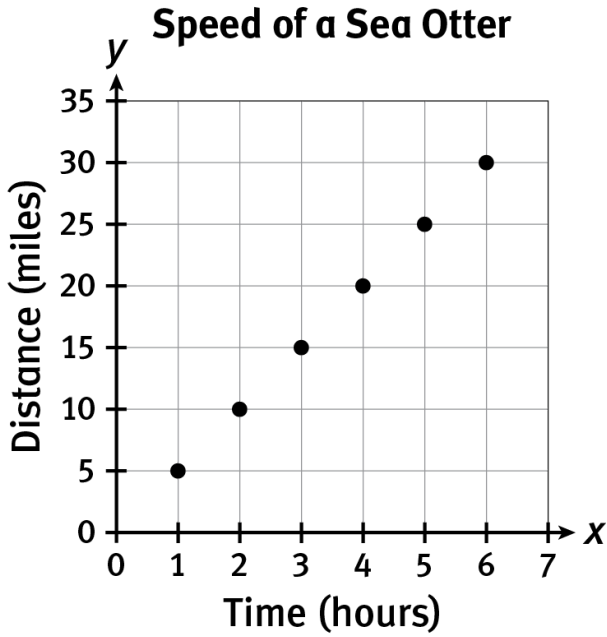
Distance (km)	48.5	116.4	174.6	n
Time (hr)	0.5	1.2	1.8	2.5

Which of the following proportions can be used to find if the distance traveled, n , is proportional to time?

- A) $\frac{48.5}{0.5} = \frac{n}{2.5}$
 B) $\frac{48.5}{0.5} = \frac{2.5}{n}$
 C) $\frac{48.5}{n} = \frac{n}{2.5}$

5

The graph relates the distance, in miles, that a sea otter can swim in a given amount of time, in hours.

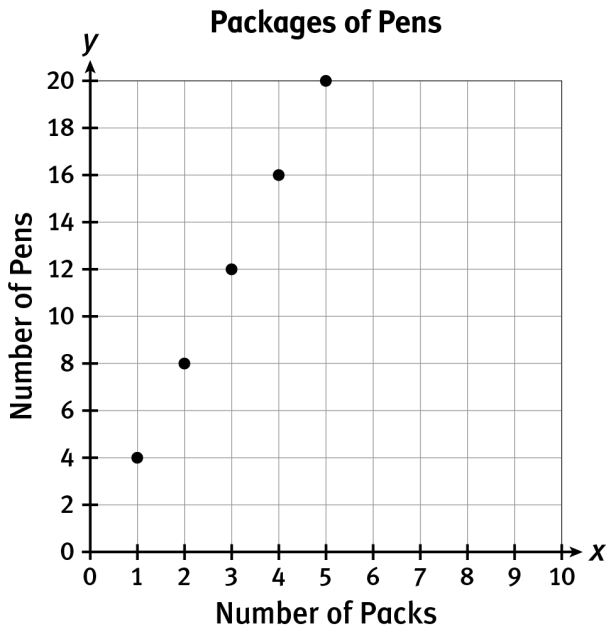


What does the point (1, 5) mean in this situation?

- A) The slowest a sea otter can swim is 5 mph.
- B) The fastest a sea otter can swim is 5 mph.
- C) A sea otter can swim 1 mile in 5 hours.
- D) A sea otter can swim 5 miles in 1 hour.

6

The graph shows the relationship between a pack of pens and the number of pens.



Which of the following equations can be used to represent the number of pens, y , in x number of packs?

- A) $y = 4x$
- B) $x = 4y$
- C) $y = x + 4$
- D) $x = y + 4$

7

There are 135 test tubes in 3 boxes. Each box has an equal number of test tubes. Which of the following equations can be used to find the number of test tubes, y , in x boxes?

- A) $y = 135x$
- B) $y = \frac{135}{x}$
- C) $y = 45x$
- D) $y = \frac{45}{x}$

8

Shana is knitting a scarf for a friend. The table shows the relationship between the number of rows she has knit and the length of the scarf in inches.

Rows	10	15	25	30
Length (in.)	4	6	10	12

Which of the following equations can be used to find the length of the scarf in inches, y , with x number of rows?

- A) $y = \frac{2}{5}x$
- B) $y = \frac{5}{2}x$
- C) $y = 4x$
- D) $y = 10x$

9

The weather service tracks the amount of snow that accumulates over time during a storm. The data are shown in the table.

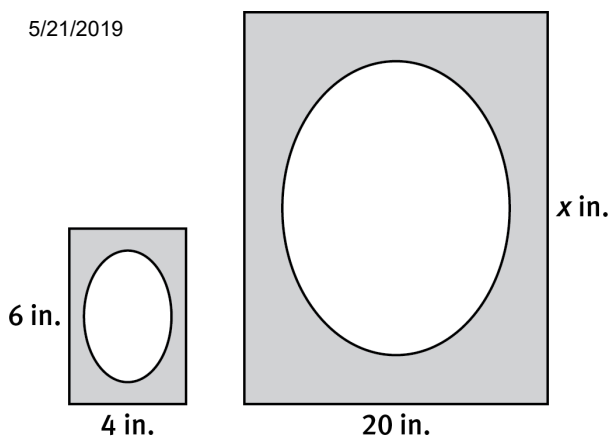
Time (hr), x	3	4.5	6	9
Snow (in.), y	1	1.5	2	3

What is the constant of proportionality?

- A) $\frac{1}{3}$
- B) $\frac{1}{2}$
- C) 2
- D) 3

10

The drawing on the left shows a picture frame. On the right is a scale drawing of that picture frame, dilated to allow an artist to design detailed carving.



What is the missing dimension x in the scale drawing of the picture frame?

- A) 18 in.
- B) 22 in.
- C) 24 in.
- D) 30 in.

11

A car has a length of 193.2 inches. A scale drawing is made using a ratio of 20 : 1. What is the length of the scale drawing?

- A) 0.10 in.
- B) 9.66 in.
- C) 173.20 in.
- D) 213.20 in.

12

Callie needs to drive from Chicago, Illinois to St. Louis, Missouri. Her map has a scale of $\frac{\text{in}}{\text{mi}} = \frac{1}{50}$. The distance of the trip measures 5.94 inches on the map. How many miles will Callie need to drive?

Callie will need to drive

miles.

13

Stephen has an art print that measures 104.5 inches by 67.5 inches. He wants to scale the print to 9.5 inches by 7.5 inches to fit in a frame. Which of the following is the largest scale he could use?

- A) $\frac{1}{11}$
- B) $\frac{1}{9}$
- C) 9
- D) 11

14

Students majoring in engineering make up 21% of the students at a university. There are 6,600 total students enrolled at the university. How many students are majoring in engineering?

- A) 314
- B) 1,386
- C) 31,429
- D) 138,600

15

Each weekday, 3,200,000 people in Massachusetts commute to work. Of the total commuters, 403,200 take public transportation. What percentage of commuters take public transportation?

- A) 0.126%
- B) 7.93%
- C) 12.6%
- D) 87.4%

16

Tameka read 50 books last year. Of the books she read last year, 34% were nonfiction. How many nonfiction books did Tameka read last year?

- A) 17
- B) 33
- C) 147
- D) 170

17

Alana found a sofa she wants to buy for her new apartment. The sofa costs \$950.00 plus tax. If Alana paid \$999.40 for the sofa, what percent sales tax did she pay?

- A) 0.95%
- B) 1.05%
- C) 4.9%
- D) 5.2%

18

Yara took a taxi to the airport. The fare was \$26.75. If she wants to give the taxi driver a 15% tip, how much should she pay altogether?

- A) \$26.90
- B) \$30.76
- C) \$41.75
- D) \$66.88

19

Chris works at a jewelry store, and he earns 4% commission on all sales that he makes. If Chris's jewelry sales total \$1,370, how much will he earn in commission?

- A) \$34.25
- B) \$54.80
- C) \$342.50
- D) \$548.00

20

In 2000, the population of Seattle was 3,043,878. By 2015, the population increased to 3,733,580. What was the percent increase in the population of Seattle between 2000 and 2015 rounded to the nearest hundredth?

- A) 18.47%
- B) 22.66%
- C) 80.53%
- D) 122.66%

21

Javi used to ride his bike 1.65 miles to school. His family recently moved and now he only has to ride his bike 1.25 miles to school. What is the percent decrease in the distance that Javi has to ride to school? Round to the nearest tenth.

- A)24.2%
- B)32.0%
- C)40.0%
- D)75.8%

22

Noelle spends \$6.87 on materials for each bracelet she makes. She sells the bracelets at a craft fair for \$18 each. What is the percent markup on the bracelets?

- A)38.2%
- B)61.8%
- C)162.0%
- D)362.0%

23

Liam wants to buy a pair of shoes. The original price is \$64.99. The store is having a 20% off sale, and Liam has a coupon for an additional 10% off of the sale price. How much will Liam pay for the shoes?

- A)\$45.49
- B)\$46.79
- C)\$51.99
- D)\$58.49

24

Jesy took out a loan of \$16,500 over 5 years at 4.2% interest to purchase a new car. How much will she pay in interest on the loan?

- A)\$693
- B)\$3,465
- C)\$13,035
- D)\$34,650

25

Members of a band estimated that 200 people were at their show last night. Their manager told them that 227 people had actually been at the show. What was the band's percent error?

%