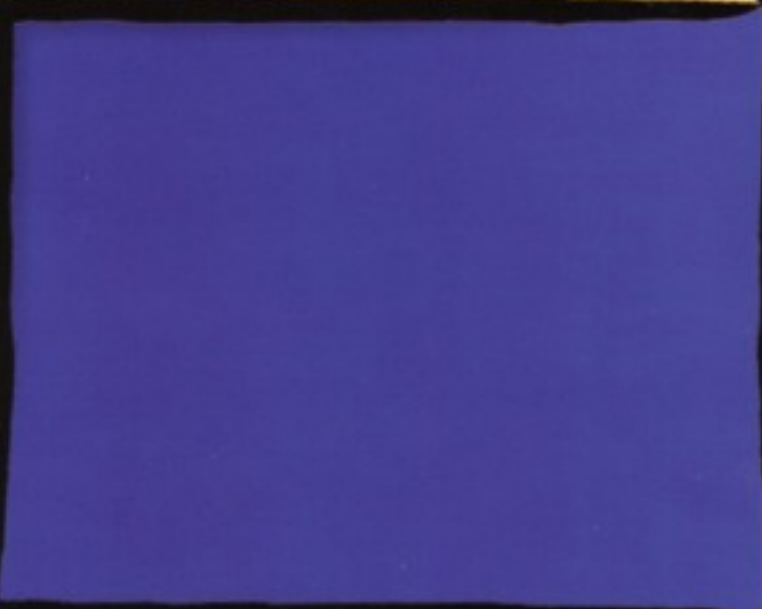


STECK-VAUGHN



# Stanford

Tenth Edition





## DIRECTIONS

Read each question or problem carefully. Then answer the question or work the problem. Mark the space for your answer.

### SAMPLE A

Les weighed the items in his backpack. He found that CDs, notebooks, and other items made up 25% of the weight. The rest was textbooks. Which number is equivalent to 25%?

- A 2.5
- B 0.25
- C 0.025
- D 0.0025

### SAMPLE B

Josie is working a puzzle in the newspaper. The puzzle shows this number pattern.

1, 4, 7, 10, 13, ?

What is the next number in the pattern?

- A 16
- B 18
- C 19
- D 21

1

What is the value of this expression?

$$6^2 + \frac{(12 - 2)}{2} \cdot (-5)$$

- A -205
- B -55
- C 11
- D 36

2

Which fraction is equivalent to 2.125?

$2\frac{1}{8}$

$2\frac{1}{4}$

$2\frac{2}{5}$

$2\frac{3}{4}$

A

B

C

D



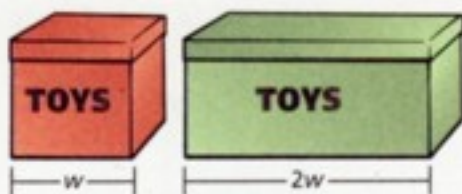
36

Amy has a quarter, and a spinner that is divided into five equal parts. The sections of the spinner are lettered V, W, X, Y, and Z. She tosses the quarter and spins the pointer on the spinner. What is the probability that she will get a combination of heads-up and the letter V?

- $\frac{1}{10}$        $\frac{1}{7}$        $\frac{1}{5}$        $\frac{1}{2}$   
**A**      **B**      **C**      **D**

38

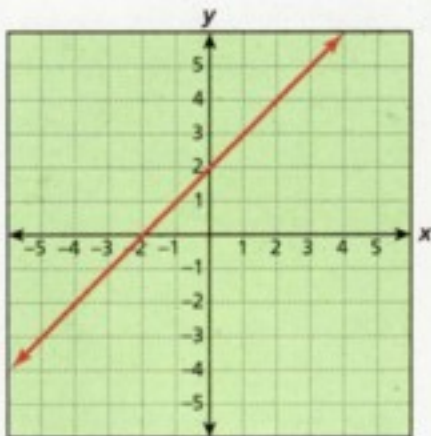
Fareed's grandfather built a toy chest for him, with a square front. The toy chest is completely full, so his grandfather is going to build Fareed another one. The front of the new toy chest will be rectangular, and have the same height but twice the width of the first chest.



How many times greater will the area of the front of the new toy chest be than that of the old toy chest?

- 2      3      4      8  
**A**      **B**      **C**      **D**

37



Which ordered pair names a point located on this line?

- A** (4, 3)  
**B** (-3, 3)  
**C** (2, -4)  
**D** (-3, -1)

# Number Sense and Operations

## Represent Numbers

The same number can be represented in words, as a decimal, as a fraction, and as a percent. The tables below show how to convert a number between 0 and 1 from one form of the number to another.

### HINT

Multiplying a number by 100 is the same as moving the decimal point two places to the right. Example:

$$0.163 \cdot 100 = 16.3$$

Dividing a number by 100 is the same as moving the decimal point two places to the left. Example:

$$0.163 \div 100 = 0.00163$$

Fraction to Decimal	Fraction to Percent
Divide the numerator of the fraction by the denominator. Example: $\frac{5}{8} = 5 \div 8 = 0.625$	Change the fraction to a decimal. Multiply the decimal by 100. Example: $\frac{1}{50} = 0.02 = 2\%$

Decimal to Fraction	Decimal to Percent
Use the decimal's smallest place value as the denominator. Use the decimal's digits as the numerator. Example: $0.38 = \frac{38}{100} = \frac{19}{50}$	Multiply the decimal by 100 and add the percent sign. Example: $0.3125 = 31.25\%$

Percent to Fraction	Percent to Decimal
Percent means per hundred; use 100 as the denominator. Use the percent's digits as the numerator. Example: $48\% = \frac{48}{100} = \frac{12}{25}$	Divide the percent by 100. Drop the percent sign. Example: $46.5\% = 0.465$

### Example

Write 0.0625 as a fraction and as a percent.

\_\_\_\_\_

Fraction: The least place value is ten-thousandths place. Use 10,000 as the denominator. Use 625 as the numerator:  $\frac{625}{10,000}$ . Simplify.

The greatest common factor of 625 and 10,000 is 625.

$$\frac{625}{10,000} = \frac{625}{10,000} \div 625 = \frac{625}{10,000} \div \frac{625}{625} = \frac{1}{16}$$

$$\text{Percent} = \frac{1}{16} = 1 \div 16 = 0.0625.$$

$$\text{Multiply } 0.0625 \text{ by } 100. \quad 0.0625 \cdot 100 = 6.25 = 6.25\%$$

## Number Sense and Operations

**1**

Which is equivalent to 96%?

- A** 9.6      **B**  $\frac{3}{2}$       **C** 96.0      **D**  $\frac{24}{25}$

**2**

In the figure below, all triangles are the same size.



What percent of the figure is shaded?

- A** 25%  
**B** 50%  
**C** 75%  
**D** 100%

**3**

The table shows the five longest bones in the human body.

**Longest Bones in the Body**

Bone	Average Length (inches)
Humerus (upper arm)	14.4
Ulna (inner lower arm)	11.1
Fibula (lower leg)	15.9
Femur (thigh bone)	19.9
Tibia (shin bone)	16.9

Which list shows the five longest bones in order from shortest to longest?

- A** Ulna, humerus, tibia, fibula, femur  
**B** Femur, tibia, fibula, humerus, ulna  
**C** Ulna, humerus, fibula, tibia, femur  
**D** Humerus, fibula, tibia, femur, ulna

**4**

One league is equivalent to 4.828 kilometers. Which is the best estimate for the number of kilometers that are equivalent to 20,000 leagues?

- A** 80,000 km  
**B** 86,000 km  
**C** 90,000 km  
**D** 100,000 km

## Geometry and Measurement

8

Which figure will change if it is rotated  $180^\circ$ ?



A



C



B



D

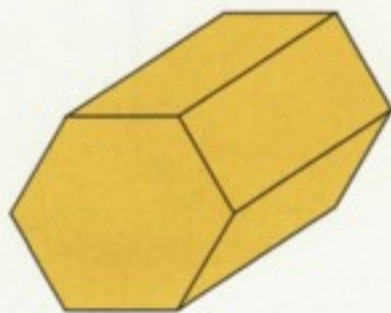
9

Which set of geometric shapes *cannot* be used to form a square?

- A two rectangles
- B two right triangles
- C a rectangle and two right triangles
- D two rectangles and one right triangle

10

Rocky sends his artwork in mailing tubes shaped like this three-dimensional figure.



What does the view of the top of this mailing tube look like?



A



C



B



D