

# 6

## Slope and Rates

### Relating Decimals, Percents, and Fractions

- Complete each row in the chart by expressing the same number in different ways.

Decimal	Percent	Fraction in lowest terms
0.75	75%	$\frac{75}{100} = \frac{75 \div 25}{100 \div 25}$ $= \frac{3}{4}$
0.4		
	60%	
		$\frac{1}{8}$

#### Hint

To write a fraction in lowest terms, divide the numerator and the denominator by their greatest common factor.

### Writing Ratios in Lowest Terms

A ratio compares two numbers. A ratio is in lowest terms if the numbers have no common factors.

14:35 is not in lowest terms because 7 is a factor of both numbers.

$$14 \div 7 = 2 \text{ and } 35 \div 7 = 5$$

$$14:35 = 2:5, \text{ in lowest terms}$$

- Write each ratio in lowest terms.

a)  $20:15 = 4:\square$

d)  $12:36 = \underline{\hspace{2cm}}$

b)  $3:18 = \underline{\hspace{2cm}}$

e)  $16:40 = \underline{\hspace{2cm}}$

c)  $50:40 = \underline{\hspace{2cm}}$

f)  $42:24 = \underline{\hspace{2cm}}$

#### Hint

Writing a ratio as a fraction can help you write it in lowest terms.

$$14:35 = \frac{14}{35}$$

$$= \frac{2}{5}$$

$$= 2:5$$

### Converting Measurements

3. a)  $2.5 \text{ h} = \underline{\hspace{2cm}} \text{ min}$

c)  $8 \text{ yd} = \underline{\hspace{2cm}} \text{ ft}$

b)  $2.1 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

d)  $0.2 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

#### Hint

Use the charts inside the back cover of the Workbook.

## Working with Integers

- Sometimes, it helps to think about what the operation means.  
 $3 \times (-4)$  means “3 groups of  $(-4)$ .”  
 $3 \times (-4) = -12$
- Sometimes, it helps to think about opposites.  
 $10 \div 5 = 2$ , so  $10 \div (-5)$  must be the opposite.  
 $10 \div (-5) = -2$
- Sometimes, it helps to think about the related operation.  
 For  $-14 \div (-2)$ , think about the related multiplication.  
 $7 \times (-2) = -14$ , so  $-14 \div (-2) = 7$

### Hint

When you multiply or divide two integers with the same sign, the result is positive.

$$3 \times 4 = 12$$

$$-3 \times (-4) = 12$$

$$12 \div 4 = 3$$

$$-12 \div (-4) = 3$$

### 4. Multiply or divide.

a)  $6 \times (-3) = \underline{\hspace{2cm}}$

d)  $-24 \div 8 = \underline{\hspace{2cm}}$

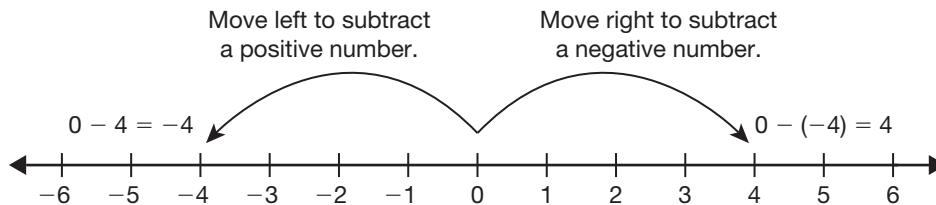
b)  $-4 \times 8 = \underline{\hspace{2cm}}$

e)  $30 \div (-5) = \underline{\hspace{2cm}}$

c)  $-6 \times (-7) = \underline{\hspace{2cm}}$

f)  $-27 \div (-3) = \underline{\hspace{2cm}}$

Think of a number line to subtract with integers.



### 5. Subtract.

a)  $12 - 8 = \underline{\hspace{2cm}}$

d)  $4 - (-3) = \underline{\hspace{2cm}}$

b)  $3 - 6 = \underline{\hspace{2cm}}$

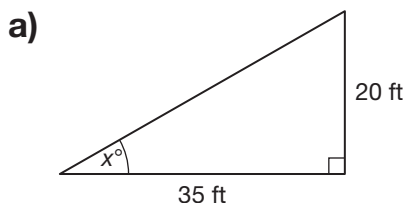
e)  $-10 - (-6) = \underline{\hspace{2cm}}$

c)  $-5 - 8 = \underline{\hspace{2cm}}$

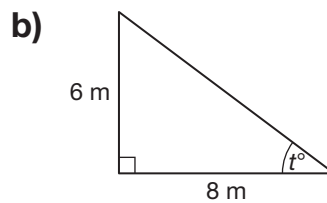
f)  $-12 - (-15) = \underline{\hspace{2cm}}$

## Calculating Tangents

### 6. Calculate the tangent for each angle of elevation.



$\tan x^\circ = \underline{\hspace{2cm}}$



$\tan t^\circ = \underline{\hspace{2cm}}$

### Hint

$$\tan A^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

