6 Slope and Rates

Relating Decimals, Percents, and Fractions

1. 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.

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

14:35 = **2:5**, in lowest terms

Hint

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

$14:35 = \frac{14}{35} = \frac{2}{5} = 2:5$

2. Write each ratio in lowest terms.

a) 20:15 = 4:☐

b) 3:18 = _____

c) 50:40 = _____

d) 12:36 = _____

e) 16:40 = _____

f) 42:24 = _____

Converting Measurements

3. a) 2.5 h = _____ min

b) 2.1 km = _____ m

c) 8 yd = _____ ft

d) 0.2 L = _____ 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) $6 \times (-3) =$ _____

b) $-4 \times 8 =$ _____

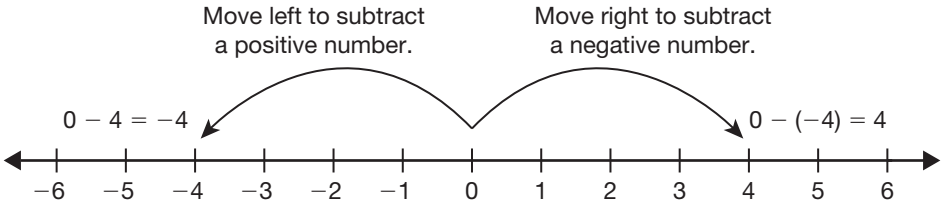
c) $-6 \times (-7) =$ _____

d) $-24 \div 8 =$ _____

e) $30 \div (-5) =$ _____

f) $-27 \div (-3) =$ _____

Think of a number line to subtract with integers.



5. Subtract.

a) $12 - 8 =$ _____

b) $3 - 6 =$ _____

c) $-5 - 8 =$ _____

d) $4 - (-3) =$ _____

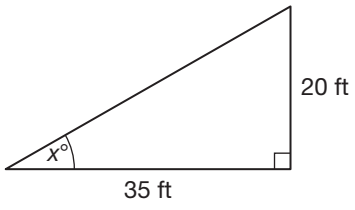
e) $-10 - (-6) =$ _____

f) $-12 - (-15) =$ _____

Calculating Tangents

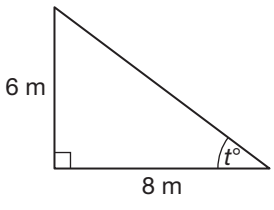
6. Calculate the tangent for each angle of elevation.

a)

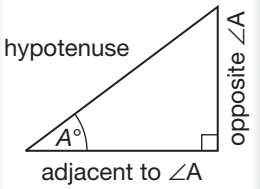


$\tan x° =$ _____

b)



$\tan t° =$ _____

Hint

$\tan A° = \dfrac{\text{opposite}}{\text{adjacent}}$