

# WELCOME TO 7<sup>TH</sup> GRADE

Dear Students and Parents,

As a 7<sup>th</sup> grader, it is important to be able to solve operations with decimals and fractions. This is prerequisite material needed to be successful next year. Please complete the attached packet.

- This summer packet must be completed BEFORE the first day of school.
- You are to show all work. (no calculator)
- Packets will be graded as a homework assignment.
- Packets will be collected the first day of school.
- You will be given a test on this material within the first week of school that will count toward your first marking period grade.

Do not expect to complete this packet in one sitting. It is recommended that you work on one worksheet at a time. Plan to take your time when working on these problems. You may use another sheet of paper if there is not enough room to show your work. Showing work demonstrates to your teacher that you fully understand the concepts.

If you need help, you can go to <http://www.khanacademy.org> and sign up (free) to begin using this on-line learning tool.

**Students and Parents: To show that you have read and understood the instructions above, please sign below and return it to your teacher on the first day of school.**

**Thank you, and have a great summer!**

Student Name: \_\_\_\_\_ (print)

Student Signature: \_\_\_\_\_

Parent Signature: \_\_\_\_\_

# REVIEW: Multiples of Whole Numbers

Name \_\_\_\_\_

## Key Concept and Vocabulary

Multiples of 8:

8, 16, 24, 32, **40**, 48, ...

Multiples of 10:

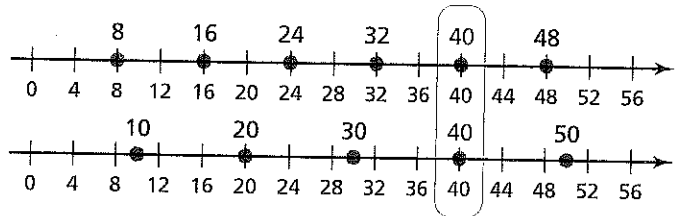
10, 20, 30, **40**, 50, ...

least common multiple

LCM



## Visual Model



## Skill Examples

- The LCM of 4 and 6 is 12.
- The LCM of 1 and 3 is 3.
- The LCM of 3 and 5 is 15.
- The LCM of 12 and 40 is 120.
- The LCM of 11 and 33 is 33.

The LCM of two primes is their product.

## Application Example

- Find the minimum number of 6-taco packages that will serve 4 people with no tacos left over.

The LCM of 4 and 6 is 12.

- For 1 package, there will be 6 tacos and 2 will be left over. For 2 packages, there will be 12 tacos. Each person gets 3.



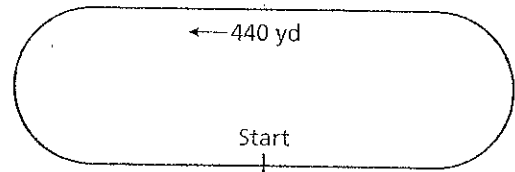
## PRACTICE MAKES PURR-FECT™

Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Find the least common multiple of the two whole numbers.

- 3 and 7: \_\_\_\_\_
- 3 and 6: \_\_\_\_\_
- 6 and 9: \_\_\_\_\_
- 9 and 12: \_\_\_\_\_
- 6 and 21: \_\_\_\_\_
- 24 and 30: \_\_\_\_\_
- 24 and 32: \_\_\_\_\_
- 15 and 40: \_\_\_\_\_
- 48 and 128: \_\_\_\_\_

- RUNNING** One trip around a track is 440 yards. One runner can complete one lap in 8 minutes. Another can complete a lap in 6 minutes. How long will it take for both to arrive at the starting point together if they start at the same place? \_\_\_\_\_



- BUYING TACOS** Find the minimum number of 5-taco packages that will serve 4 people with no tacos left over. How many will each person get?  
\_\_\_\_\_

- HOW MANY PENNIES?** With the same collection of pennies, you can make stacks that have 3 pennies, 4 pennies, or 9 pennies with none left over. How many pennies do you have?  
\_\_\_\_\_

**Key Concept and Vocabulary**

“Please Excuse My Dear Aunt Sally”

- 1st **P**arentheses
- 2nd **E**xponents
- 3rd **M**ultiplication and **D**ivision (from left to right)
- 4th **A**ddition and **S**ubtraction (from left to right)

Simplify  $4^2 \div 2 + 3(9 - 5)$ .

$$\begin{aligned}
 4^2 \div 2 + 3(9 - 5) &= 4^2 \div 2 + 3 \cdot 4 \\
 &= 16 \div 2 + 3 \cdot 4 \\
 &= 8 + 12 \\
 &= 20
 \end{aligned}$$



**Skill Examples**

1.  $18 \div 2 - 4 = 9 - 4 = 5$
2.  $12 \cdot (6 - 2) = 12 \cdot 4 = 48$
3.  $14 \cdot 3 - 19 = 42 - 19 = 23$
4.  $20 \div 10 + 21 \cdot 5 = 2 + 105 = 107$
5.  $(2 + 3)^2 - 5 = 25 - 5 = 20$

**Application Example**

6. At a museum, 4 adults pay \$5 each and 6 children pay \$3 each. What is the total cost of the tickets?

$$\begin{aligned}
 4 \cdot 5 + 6 \cdot 3 &= 20 + 18 \\
 &= 38
 \end{aligned}$$

∴ The total cost is \$38.



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Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

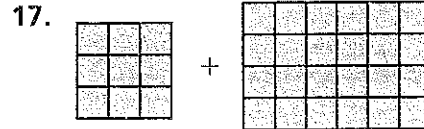
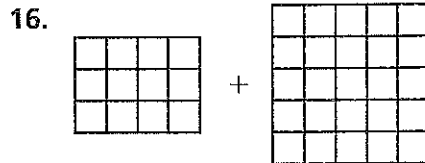
**Simplify.**

7.  $3^2 + 5(4 - 2) =$  \_\_\_\_\_
8.  $3 + 4 \div 2 =$  \_\_\_\_\_
9.  $10 \div 5 \cdot 3 =$  \_\_\_\_\_
10.  $4(3^3 - 8) \div 2 =$  \_\_\_\_\_
11.  $3 \cdot 6 - 4 \div 2 =$  \_\_\_\_\_
12.  $12 + 7 \cdot 3 - 24 =$  \_\_\_\_\_

**Insert parentheses to make the statement true.**

13.  $5^2 - 15 \div 5 = 2$
14.  $12 \cdot 2^3 + 4 = 144$
15.  $91 - 21 \div 7 = 10$

**Write an expression for the total area of the two rectangles. Evaluate your expression.**



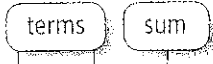
18. **ADMISSION** At a baseball game, 6 adults pay \$20 each and 4 children pay \$10 each. What is the total cost of the tickets? \_\_\_\_\_
19. **INSERTING PARENTHESES** Insert parentheses in the expression  $4 + 2^3 - 5 \cdot 2$  in two ways: (a) so that the value is 10 and (b) so that the value is 14.

(a) \_\_\_\_\_ (b) \_\_\_\_\_

# REVIEW: Adding and Subtracting Integers

Name \_\_\_\_\_

## Key Concept and Vocabulary



$$6 + (-2) = 4$$

$$7 - (-3) = 10$$

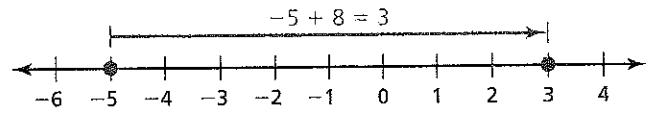


Add and subtract.



## Visual Model

To add a positive number, move to the *right*.



To subtract a positive number, move to the *left*.

## Skill Examples

1.  $5 + (-3) = 5 - 3 = 2$

2.  $5 - (-2) = 5 + 2 = 7$

3.  $-2 + 4 = 2$

4.  $-3 - (-2) = -3 + 2 = -1$

5.  $8 - (-3) = 8 + 3 = 11$

To subtract, change the sign and add.

## Application Example

6. The temperature is  $8^{\circ}\text{F}$  in the morning and drops to  $-5^{\circ}\text{F}$  in the evening. What is the difference between these temperatures?

$$8 - (-5) = 8 + 5 = 13$$

∴ The difference is 13 degrees.

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Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Find the sum or difference.

7.  $-2 + 3 = \underline{\quad}$

8.  $-4 - 5 = \underline{\quad}$

9.  $8 - 2 = \underline{\quad}$

10.  $8 - (-2) = \underline{\quad}$

11.  $-4 - (-1) = \underline{\quad}$

12.  $-5 + (-5) = \underline{\quad}$

13.  $4 - (-8) = \underline{\quad}$

14.  $4 - 8 = \underline{\quad}$

15.  $-4 + (-6) = \underline{\quad}$

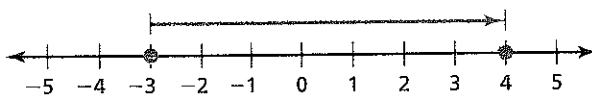
16.  $-4 - (-6) = \underline{\quad}$

17.  $10 - 13 = \underline{\quad}$

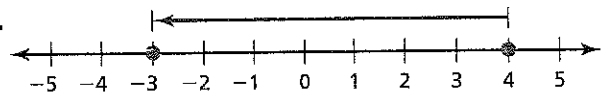
18.  $13 - (-10) = \underline{\quad}$

Write the addition or subtraction shown by the number line.

19.



20.



21. **TEMPERATURE** The temperature is  $16^{\circ}\text{F}$  in the morning and drops to  $-15^{\circ}\text{F}$  in the evening. What is the difference between these temperatures? \_\_\_\_\_

22. **SUBMARINE** A submarine is 450 feet below sea level. It descends 300 feet. What is its new position? Show your work.



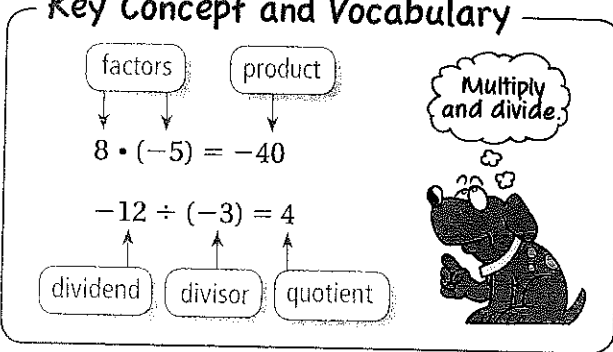
\_\_\_\_\_

\_\_\_\_\_

# REVIEW: Multiplying and Dividing Integers

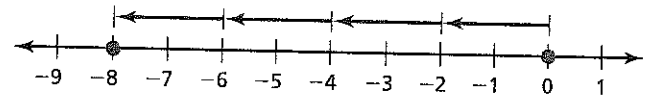
Name \_\_\_\_\_

## Key Concept and Vocabulary



## Visual Model

$$4 \cdot (-2) = (-2) + (-2) + (-2) + (-2)$$



## Skill Examples

- $-3 \cdot (-4) = 12$  ← same sign, product and quotient positive
- $-36 \div (-6) = 6$  ← same sign, product and quotient positive
- $-7 \cdot 0 = 0$
- $-10 \div 5 = -2$  ← different signs, product and quotient negative
- $-5 \cdot 6 = -30$  ← different signs, product and quotient negative

## Application Example

- Each of your six friends owes you \$5. Use integer multiplication to represent the total amount your friends owe you.

$$6 \cdot (-5) = -30$$

∴ The total amount owed is \$30.

## PRACTICE MAKES PURR-FECT™



Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Find the product or quotient.

- $-3 \times (-5) = \underline{\hspace{2cm}}$
- $7(-3) = \underline{\hspace{2cm}}$
- $0 \cdot (-5) = \underline{\hspace{2cm}}$
- $(-5)(-7) = \underline{\hspace{2cm}}$
- $-8 \cdot 2 = \underline{\hspace{2cm}}$
- $(-5)^2 = \underline{\hspace{2cm}}$
- $(-3)^3 = \underline{\hspace{2cm}}$
- $4(-2)(-3) = \underline{\hspace{2cm}}$
- $-16 \div 4 = \underline{\hspace{2cm}}$
- $-20 \div (-5) = \underline{\hspace{2cm}}$
- $\frac{-9}{3} = \underline{\hspace{2cm}}$
- $\frac{-20}{-10} = \underline{\hspace{2cm}}$

Complete the multiplication or division equation.

- $-15 \div \underline{\hspace{2cm}} = -3$
- $45 \div \underline{\hspace{2cm}} = -5$
- $\underline{\hspace{2cm}} \div (-20) = 5$
- $8 \cdot \underline{\hspace{2cm}} = -64$
- $\underline{\hspace{2cm}} \cdot (-9) = 27$
- $-12 \cdot \underline{\hspace{2cm}} = -96$
- TOTAL OWED** Each of your eight friends owes you \$10. Use integer multiplication to represent the total amount your friends owe you. \_\_\_\_\_
- TEMPERATURE** The low temperatures for a week in Edmonton, Alberta are  $-15^\circ\text{C}$ ,  $-12^\circ\text{C}$ ,  $-10^\circ\text{C}$ ,  $-12^\circ\text{C}$ ,  $-18^\circ\text{C}$ ,  $-20^\circ\text{C}$ , and  $-25^\circ\text{C}$ . What is the mean low temperature for the week? Show your work.  
\_\_\_\_\_  
\_\_\_\_\_

# REVIEW: Simplifying Fractions

Name \_\_\_\_\_

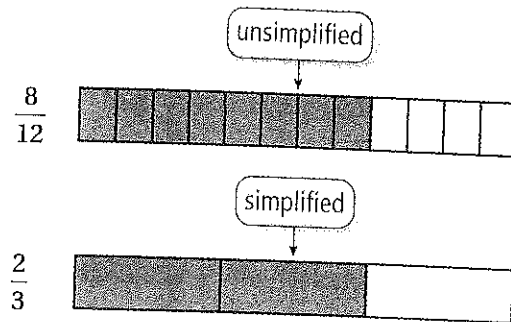
## Key Concept and Vocabulary

$$\frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$$

Divide numerator and denominator by common factor.



## Visual Model



## Skill Examples

1.  $\frac{2}{4} = \frac{1 \cdot \cancel{2}}{2 \cdot \cancel{2}} = \frac{1}{2}$

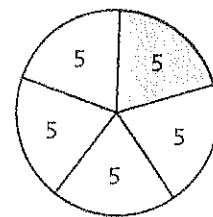
2.  $\frac{3}{6} = \frac{1 \cdot \cancel{3}}{2 \cdot \cancel{3}} = \frac{1}{2}$

3.  $\frac{15}{20} = \frac{3 \cdot \cancel{5}}{4 \cdot \cancel{5}} = \frac{3}{4}$

4.  $\frac{80}{100} = \frac{4 \cdot \cancel{20}}{5 \cdot \cancel{20}} = \frac{4}{5}$

## Application Example

5. Five of the 25 students in your class have a Facebook account. Write this fraction in simplified form.



$$\frac{5}{25} = \frac{1 \cdot \cancel{5}}{5 \cdot \cancel{5}} = \frac{1}{5}$$

- ∴ One-fifth of your class has a Facebook account.

## PRACTICE MAKES PURR-FECT™



Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Simplify the fraction.

6.  $\frac{16}{18} =$  \_\_\_\_\_

7.  $\frac{10}{12} =$  \_\_\_\_\_

8.  $\frac{6}{8} =$  \_\_\_\_\_

9.  $\frac{15}{45} =$  \_\_\_\_\_

10.  $\frac{12}{40} =$  \_\_\_\_\_

11.  $\frac{14}{21} =$  \_\_\_\_\_

12.  $\frac{6}{2} =$  \_\_\_\_\_

13.  $\frac{20}{50} =$  \_\_\_\_\_

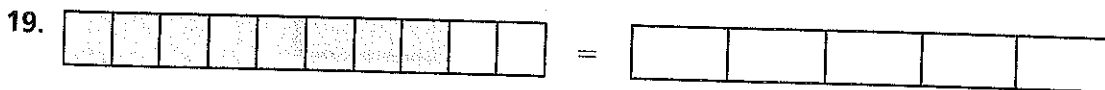
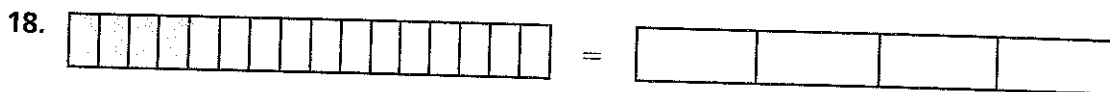
14.  $\frac{12}{30} =$  \_\_\_\_\_

15.  $\frac{20}{15} =$  \_\_\_\_\_

16.  $\frac{75}{85} =$  \_\_\_\_\_

17.  $\frac{21}{35} =$  \_\_\_\_\_

Shade the model so that the fraction is simplified.



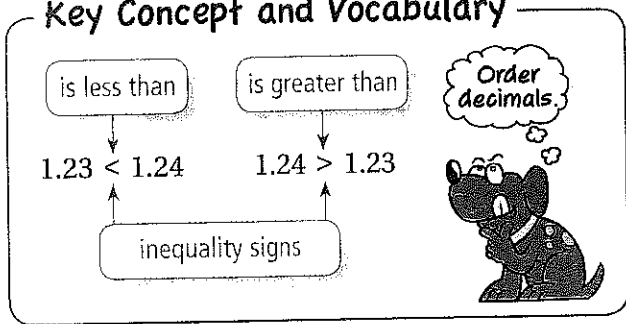
20. **FACEBOOK** Eight of the 24 students in your class have a Facebook account. Write this fraction in simplified form. \_\_\_\_\_

21. **SIMPLIFYING** Write five different fractions that each simplify to two-fifths.

# REVIEW: Comparing and Ordering Decimals

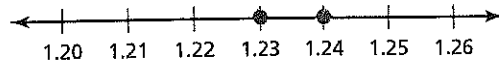
Name \_\_\_\_\_

## Key Concept and Vocabulary



## Visual Model

Number Line



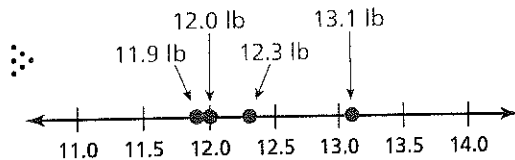
1.23 < 1.24 because 1.23 is to the left of 1.24 on the number line.

## Skill Examples

- $34.07 > 30.47$
- $12.35 < 12.351$
- $17,056.4 > 17,055.9$
- $0.004 < 0.030$
- $0.1003 > 0.0999$

## Application Example

6. Order the weights from least to greatest:  
12.3 lb, 11.9 lb, 12.0 lb, 13.1 lb.

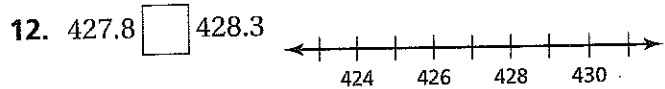
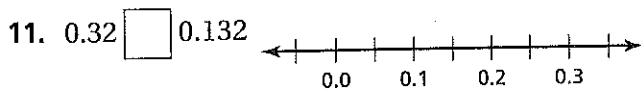
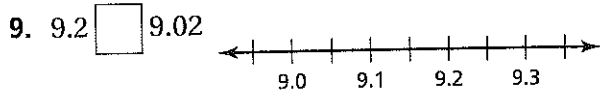
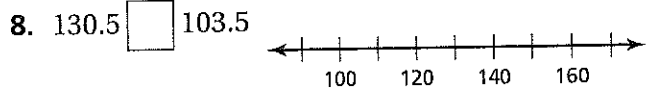
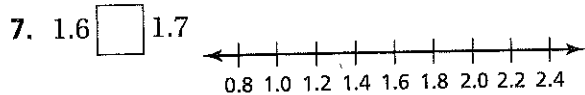


## PRACTICE MAKES PURR-FECT™



Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Graph the two numbers. Then compare them using <, >, or =.

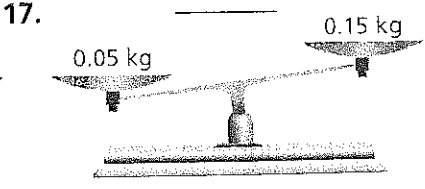
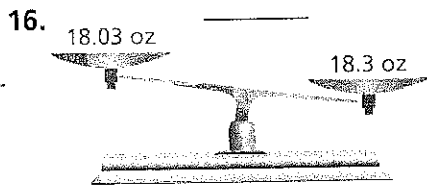
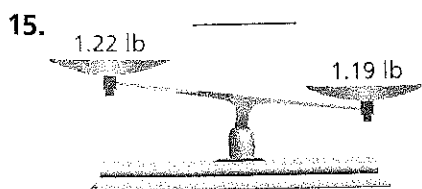


Order the lengths from least to greatest.

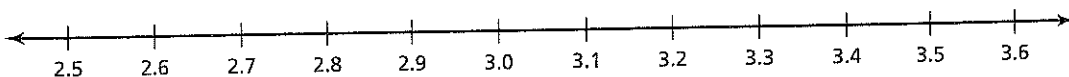
13. 32.5 ft, 29.9 ft, 32.3 ft, 31.7 ft, 31.75 ft

14. 0.5 mi, 0.05 mi, 0.47 mi, 1.02 mi, 0.08 mi

Is the scale balanced correctly?



18. NUMBER LINE On the number line, shade all values of  $x$  for which  $x \leq 3.2$  and  $x \geq 2.9$ .



# REVIEW: Fractions and Decimals

Name \_\_\_\_\_

## Key Concept and Vocabulary

$$\frac{1}{10} = 0.1 \quad \frac{1}{5} = 0.2 \quad \frac{2}{5} = 0.4$$

$$\frac{1}{4} = 0.25 \quad \frac{1}{2} = 0.5 \quad \frac{3}{4} = 0.75$$

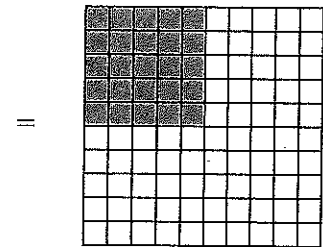
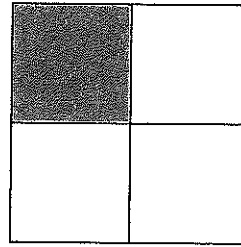
$$\frac{1}{8} = 0.125 \quad \frac{3}{8} = 0.375 \quad \frac{5}{8} = 0.625$$

Common Fractions



## Visual Model

$$\frac{1}{4} = 0.25$$



## Skill Examples

$$1. 0.6 = \frac{6}{10} = \frac{3}{5} \quad 2. \frac{4}{5} = \frac{4 \cdot 2}{5 \cdot 2} = \frac{8}{10} = 0.8$$

$$3. 0.875 = \frac{875}{1000} = \frac{7 \cdot 125}{8 \cdot 125} = \frac{7}{8}$$

$$4. \frac{1}{3} = 0.333... = 0.\bar{3} \quad \frac{0.3333...}{3 \overline{)1.0000...}}$$

## Application Example

5. You put 16.75 gallons of gas in your car. Write this decimal as a mixed number.

$$16.75 = 16 + 0.75 = 16\frac{3}{4}$$

- ∴ You put  $16\frac{3}{4}$  gallons of gas in your car.



## PRACTICE MAKES PURR-FECT™

Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Write the fraction as a decimal.

6.  $\frac{3}{4} =$  \_\_\_\_\_

7.  $\frac{7}{10} =$  \_\_\_\_\_

8.  $\frac{3}{25} =$  \_\_\_\_\_

9.  $\frac{7}{20} =$  \_\_\_\_\_

10.  $\frac{19}{100} =$  \_\_\_\_\_

11.  $\frac{11}{50} =$  \_\_\_\_\_

12.  $\frac{2}{3} =$  \_\_\_\_\_

13.  $\frac{1}{6} =$  \_\_\_\_\_

Write the decimal as a fraction.

14.  $0.4 =$  \_\_\_\_\_

15.  $0.35 =$  \_\_\_\_\_

16.  $0.6 =$  \_\_\_\_\_

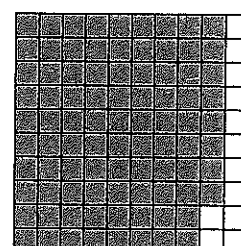
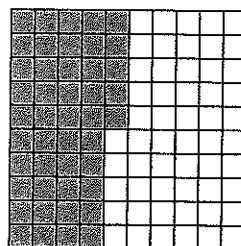
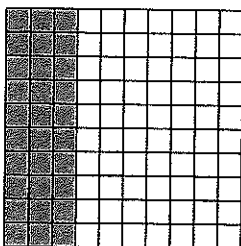
17.  $1.5 =$  \_\_\_\_\_

Write the number represented by the model as a decimal and as a simplified fraction.

18. \_\_\_\_\_ = \_\_\_\_\_

19. \_\_\_\_\_ = \_\_\_\_\_

20. \_\_\_\_\_ = \_\_\_\_\_



21. **GAS** You put 9.25 gallons of gas in your car. Write this decimal as a mixed number. \_\_\_\_\_

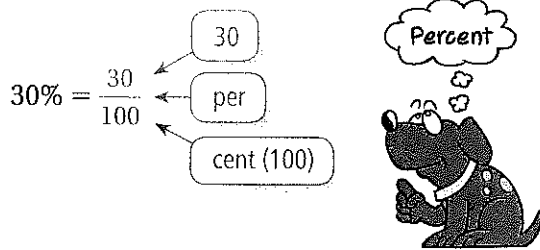
22. **MULTIPLE FORMS** Write the decimal 0.35 in two ways. One with a denominator of 100 and one with a denominator of 1000. \_\_\_\_\_



# REVIEW: Percents

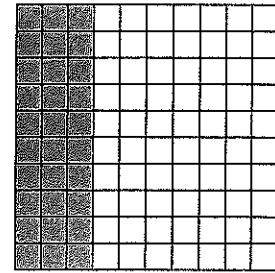
Name \_\_\_\_\_

## Key Concept and Vocabulary



## Visual Model

30% is equal to 30 parts out of 100 parts.



## Skill Examples

30% of 10 is 3:

- 30% of 10 is 3:  $\frac{30}{100} \cdot 10 = 3$
- 25% of 8 is 2:  $\frac{25}{100} \cdot 8 = 2$
- 50% of 24 is 12:  $\frac{50}{100} \cdot 24 = 12$
- 75% of 80 is 60:  $\frac{75}{100} \cdot 80 = 60$

## Application Example

- You earn \$100,000 and have to pay 40% federal income tax. How much in federal income tax do you pay?

40% of 100,000 is 40,000.

- ∴ You pay \$40,000 in federal income tax.

## PRACTICE MAKES PURR-FECT™

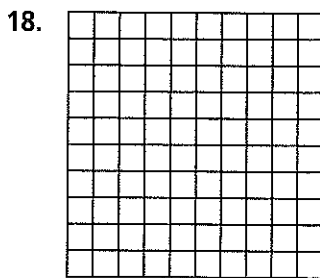


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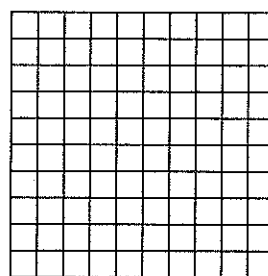
Find the percent.

- 20% of 50 = \_\_\_\_\_
- 10% of 80 = \_\_\_\_\_
- 1% of 100 = \_\_\_\_\_
- 25% of 16 = \_\_\_\_\_
- 30% of 40 = \_\_\_\_\_
- 100% of 5 = \_\_\_\_\_
- 60% of 60 = \_\_\_\_\_
- 75% of 40 = \_\_\_\_\_
- 25% of 200 = \_\_\_\_\_
- 10% of 120 = \_\_\_\_\_
- 0% of 10 = \_\_\_\_\_
- 50% of 42 = \_\_\_\_\_

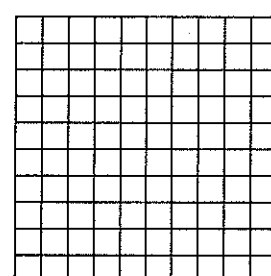
Shade the model to show the given percent.



25%



82%



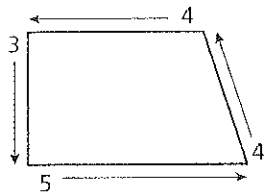
37%

- TEST SCORE** You take a test that has 20 questions and you get 80% of the questions correct. How many questions do you get correct? \_\_\_\_\_
- SALES TAX** You buy \$50 worth of clothes. The sales tax is 8%. How much sales tax do you pay? \_\_\_\_\_

# REVIEW: Perimeter

Name \_\_\_\_\_

## Key Concept and Vocabulary

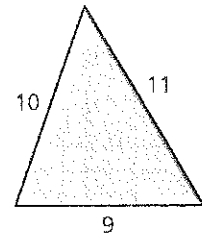


$$\text{Perimeter} = 3 + 5 + 4 + 4 = 16$$

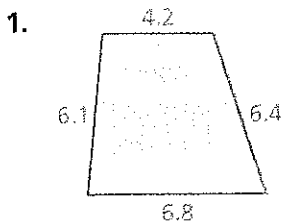


## Visual Model

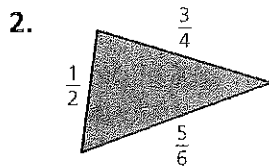
$$\begin{aligned} \text{Perimeter} &= 10 + 9 + 11 \\ &= 30 \end{aligned}$$



## Skill Examples



$$\begin{aligned} P &= 6.1 + 6.8 + 6.4 + 4.2 \\ &= 23.5 \end{aligned}$$

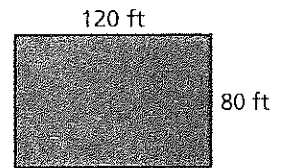


$$\begin{aligned} P &= \frac{1}{2} + \frac{5}{6} + \frac{3}{4} \\ &= \frac{25}{12} \end{aligned}$$

## Application Example

3. Find the length of fence needed to enclose the lot.

$$\begin{aligned} P &= 2(80) + 2(120) \\ &= 160 + 240 \\ &= 400 \end{aligned}$$



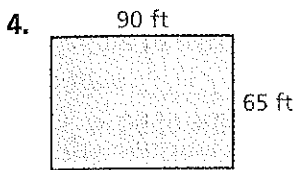
∴ You need 400 feet of fence.

## PRACTICE MAKES PURR-FECT™

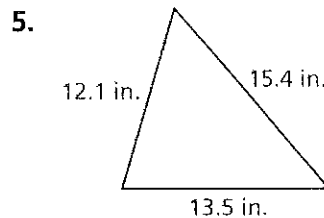


Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

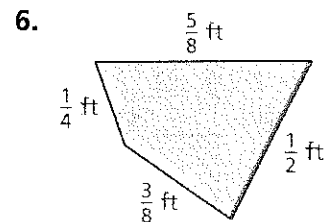
Find the perimeter of the figure.



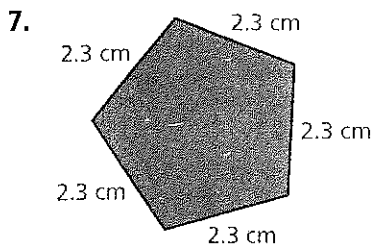
Perimeter = \_\_\_\_\_



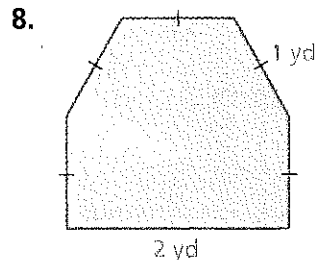
Perimeter = \_\_\_\_\_



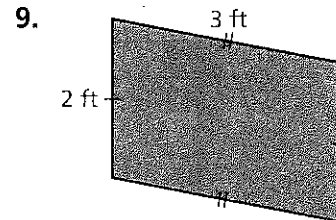
Perimeter = \_\_\_\_\_



Perimeter = \_\_\_\_\_



Perimeter = \_\_\_\_\_



Perimeter = \_\_\_\_\_

10. **RIBBON** You are wrapping a ribbon around a rectangular box that is 18 inches long and 12 inches wide. What is the minimum amount of ribbon you need? \_\_\_\_\_

11. **COUNTY LINE** A county has the shape of a quadrilateral. The lengths of the four sides are 109 miles, 94 miles, 82 miles, and 109 miles. Find the perimeter of the county. \_\_\_\_\_

# REVIEW: Circles and Circumference

Name \_\_\_\_\_

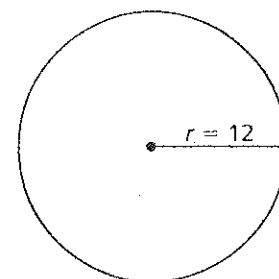
## Key Concept and Vocabulary

$C = \pi d$   
 $C = 2\pi r$   
 $\pi \approx 3.14$   
 $\pi \approx \frac{22}{7}$

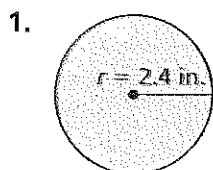
## Visual Model

Circumference of a Circle:

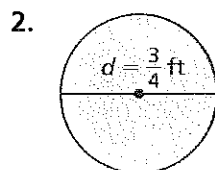
$$\begin{aligned}
 C &= 2\pi r \\
 &= 2\pi(12) \\
 &= 24\pi \\
 &\approx 75.4
 \end{aligned}$$



## Skill Examples



$$\begin{aligned}
 C &= 2\pi(2.4) \\
 &= 4.8\pi \\
 &\approx 15.1 \text{ in.}
 \end{aligned}$$

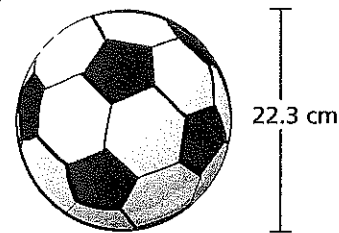


$$\begin{aligned}
 C &= \pi\left(\frac{3}{4}\right) \\
 &\approx 2.4 \text{ ft}
 \end{aligned}$$

## Application Example

3. Find the distance around the soccer ball.

$$\begin{aligned}
 C &= \pi(22.3) \\
 &\approx 70.0 \text{ cm}
 \end{aligned}$$



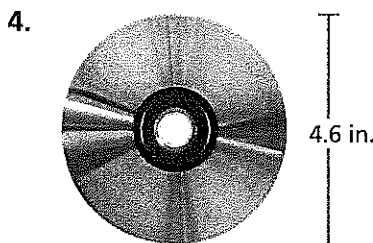
∴ The distance is about 70 centimeters.

## PRACTICE MAKES PURR-FECT™

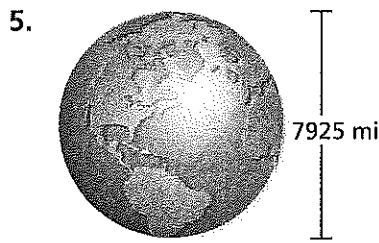


Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

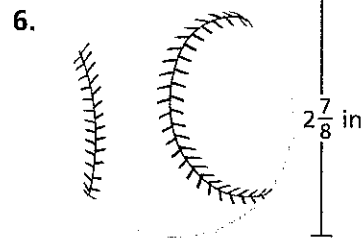
Find the circumference. Round your answer to the nearest tenth.



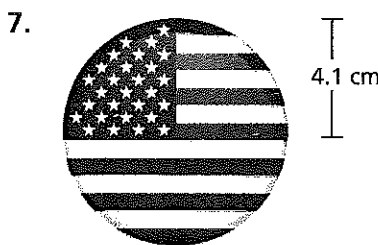
Circumference ≈ \_\_\_\_\_



Circumference ≈ \_\_\_\_\_



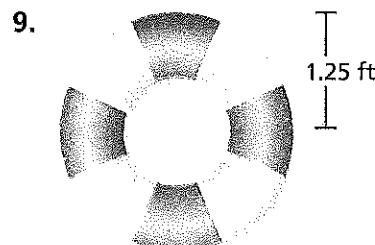
Circumference ≈ \_\_\_\_\_



Circumference ≈ \_\_\_\_\_



Circumference ≈ \_\_\_\_\_



Circumference ≈ \_\_\_\_\_

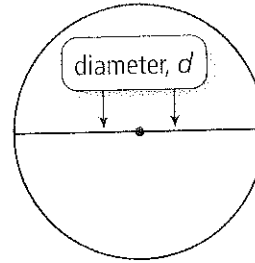
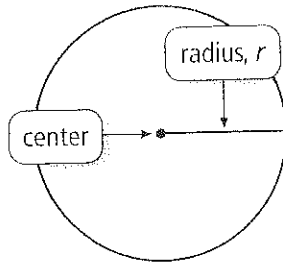
10. **RACETRACK** A circular racetrack has a circumference of one mile. What is the diameter of the racetrack in feet? \_\_\_\_\_
11. **OLD OAK TREE** You have 110 inches of yellow ribbon. The diameter of the old oak tree is 38 inches. Do you have enough yellow ribbon to wrap around the old oak tree? Explain.
- \_\_\_\_\_

# Circles

Name \_\_\_\_\_

## Key Concept and Vocabulary

The radius is half the width.



The diameter is twice the radius.

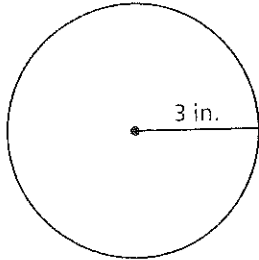


## PRACTICE MAKES PURR-FECT™

Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

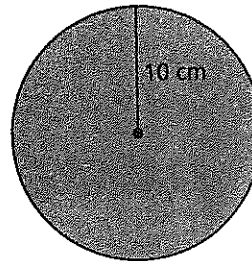
Write the radius and the diameter.

1.



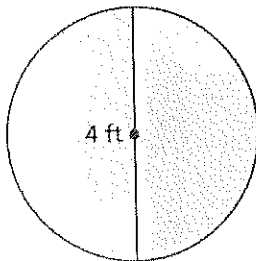
Radius = \_\_\_\_\_ in. Diameter = \_\_\_\_\_ in.

2.



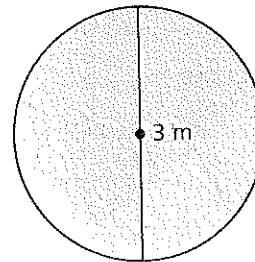
Radius = \_\_\_\_\_ cm Diameter = \_\_\_\_\_ cm

3.



Radius = \_\_\_\_\_ ft Diameter = \_\_\_\_\_ ft

4.

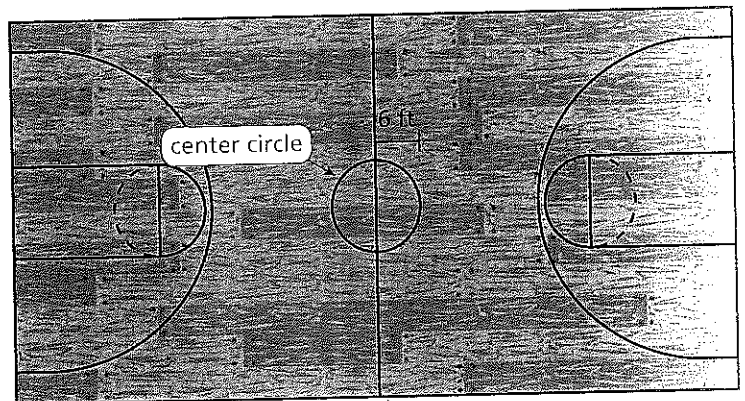


Radius = \_\_\_\_\_ m Diameter = \_\_\_\_\_ m

5. **BASKETBALL COURT** Write the radius and diameter of the center circle on a basketball court.

Radius = \_\_\_\_\_ ft

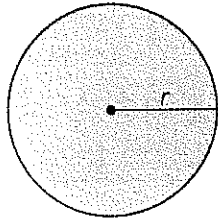
Diameter = \_\_\_\_\_ ft



# REVIEW: Areas of Circles

Name \_\_\_\_\_

## Key Concept and Vocabulary



$$A = \pi r^2$$

$$\pi \approx 3.14$$

$$\pi \approx \frac{22}{7}$$

Area



## Visual Model

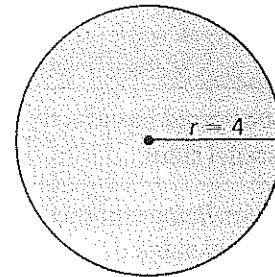
Area of a Circle:

$$A = \pi r^2$$

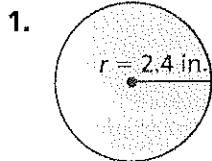
$$= \pi(4)^2$$

$$= \pi(16)$$

$$\approx 50.2$$

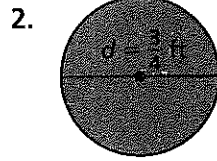


## Skill Examples



$$A = \pi(2.4)^2$$

$$\approx 18.1 \text{ in.}^2$$



$$A = \pi\left(\frac{3}{8}\right)^2$$

$$\approx 0.4 \text{ ft}^2$$



## Application Example

3. Find the area of a dime.

$$A = \pi(0.9)^2$$

$$\approx 2.5 \text{ cm}^2$$



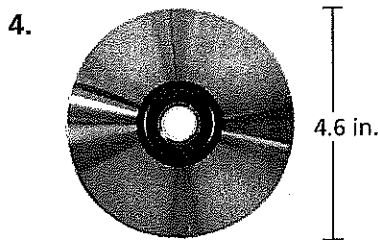
1.8 cm

- ∴ The area is about 2.5 square centimeters.

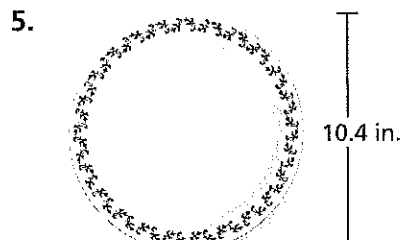
## PRACTICE MAKES PURR-FECT™

Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

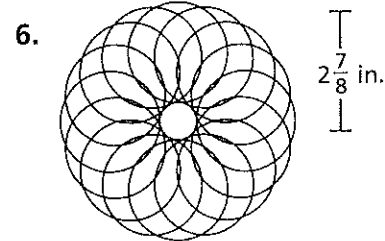
Find the area. Round your answer to the nearest tenth.



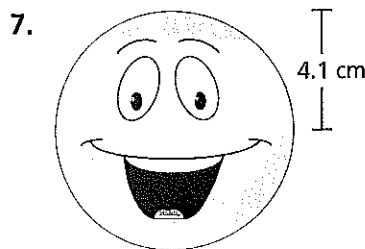
Area  $\approx$  \_\_\_\_\_



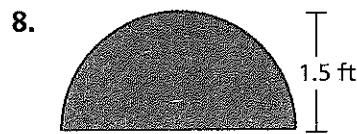
Area  $\approx$  \_\_\_\_\_



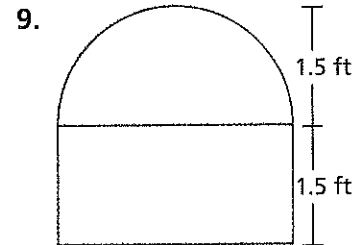
Area  $\approx$  \_\_\_\_\_



Area  $\approx$  \_\_\_\_\_



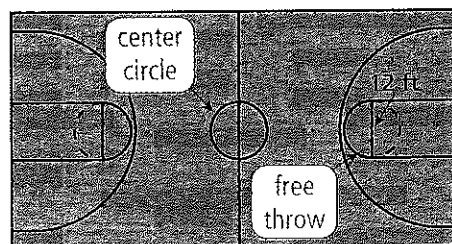
Area  $\approx$  \_\_\_\_\_



Area  $\approx$  \_\_\_\_\_

10. **BASKETBALL** Find the area of the center circle on a basketball court. \_\_\_\_\_

11. **BASKETBALL** Find the area of a free throw region on a basketball court. \_\_\_\_\_



# Area

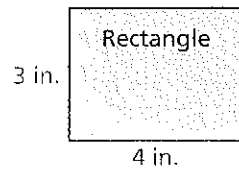
Name \_\_\_\_\_

## Key Concept and Vocabulary

Rectangle:  
Area =  $bh$

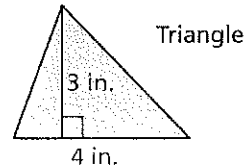


$$\begin{aligned} \text{Area} &= \text{Base} \times \text{Height} \\ &= 4 \times 3 \\ &= 12 \text{ in.}^2 \end{aligned}$$



$$\begin{aligned} \text{Area} &= \frac{1}{2} (\text{Base} \times \text{Height}) \\ &= \frac{1}{2} (4 \times 3) \\ &= 6 \text{ in.}^2 \end{aligned}$$

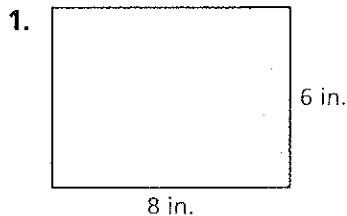
Triangle:  
Area =  $\frac{1}{2}bh$



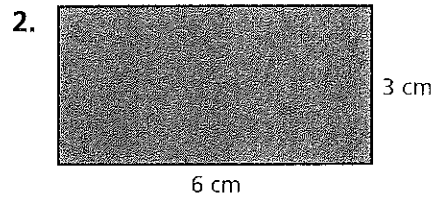
## PRACTICE MAKES PURR-FECT™

Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

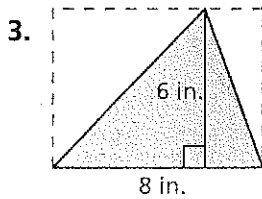
Write the area of the figure in \_\_\_\_\_ . Include the units in your answer.



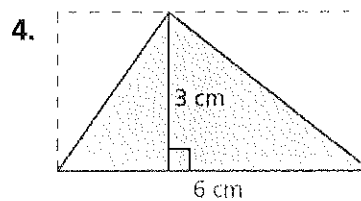
Area = \_\_\_\_\_



Area = \_\_\_\_\_



Area = \_\_\_\_\_



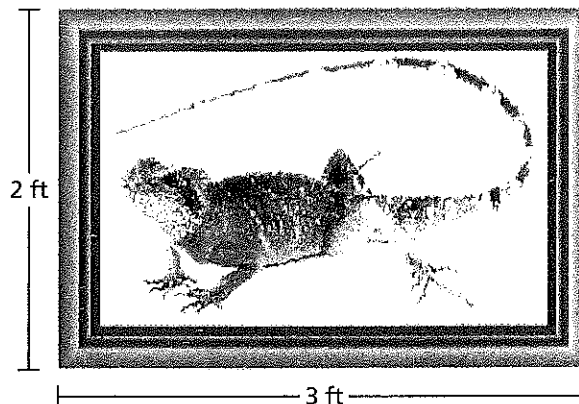
Area = \_\_\_\_\_

5. **WATERCOLOR** Find the area of the iguana painting.

Area = \_\_\_\_\_

6. **WATERCOLOR** If you doubled the base and the height, what is the area?

Area = \_\_\_\_\_



Can use calculator  
**REVIEW:** Area for this page only

Name Challenge ★

**Key Concept and Vocabulary**

Rectangle:  $A = bh$

Parallelogram:  $A = bh$

Triangle:  $A = \frac{1}{2}bh$

Trapezoid:  $A = \frac{1}{2}(B + b)h$

Area Formulas



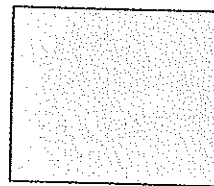
**Visual Model**

Area of a Rectangle:

$$A = bh$$

$$= (12)(10)$$

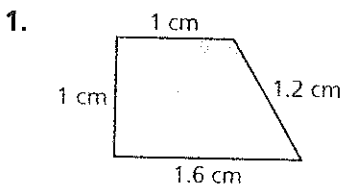
$$= 120 \text{ square units}$$



height = 10

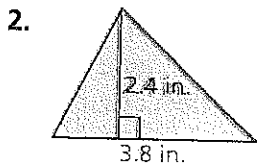
base = 12

**Skill Examples**



$$A = \frac{1}{2}(1.6 + 1)(1)$$

$$= 1.3 \text{ cm}^2$$



$$A = \frac{1}{2}(3.8)(2.4)$$

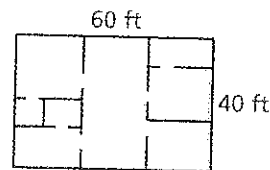
$$= 4.56 \text{ in.}^2$$

**Application Example**

3. Find the area of the apartment.

$$A = 60 \cdot 40$$

$$= 2400 \text{ ft}^2$$



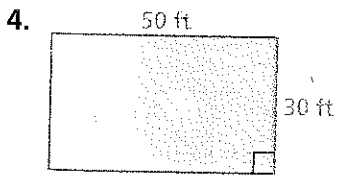
∴ The area is 2400 square feet.

**PRACTICE MAKES PURR-FECT™**

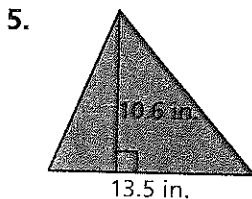


Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

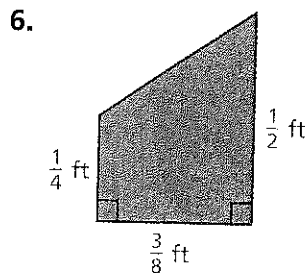
Find the area of the figure.



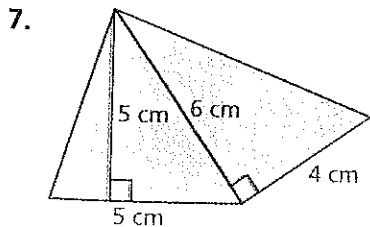
Area = \_\_\_\_\_



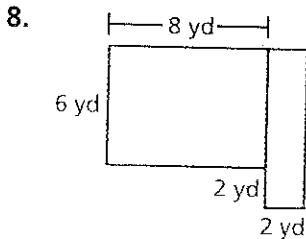
Area = \_\_\_\_\_



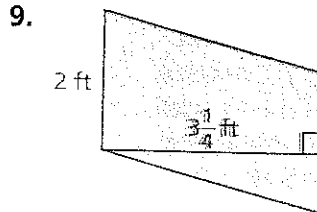
Area = \_\_\_\_\_



Area = \_\_\_\_\_



Area = \_\_\_\_\_



Area = \_\_\_\_\_

10. **CARPET** You are carpeting a rectangular room that is 3.5 yards by 4.5 yards. The carpet costs \$15 per square yard. How much will it cost to carpet the room? \_\_\_\_\_

11. **COLORADO** Colorado is approximately a rectangle that is 280 miles by 380 miles. Is the area of Colorado greater than or less than 100,000 square miles? Explain.