

Name: *Ray*

Date:

Topic:

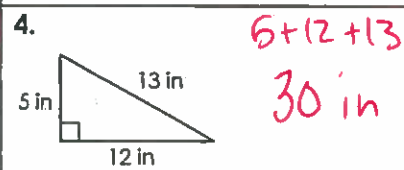
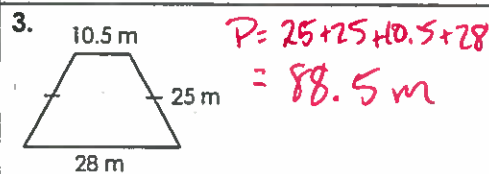
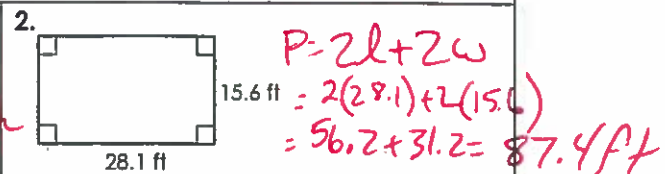
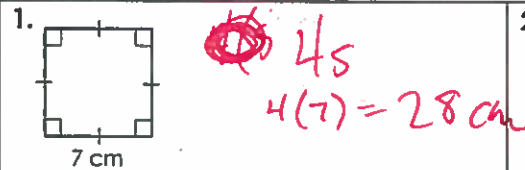
Class:

Main Ideas/Questions

Notes/Examples

**PERIMETER***Add all the sides.*

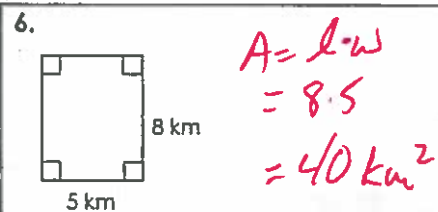
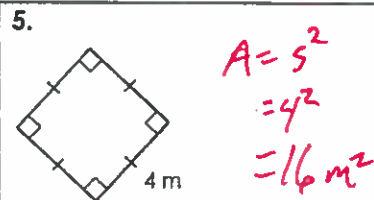
Find the perimeter of each shape:

**AREA**

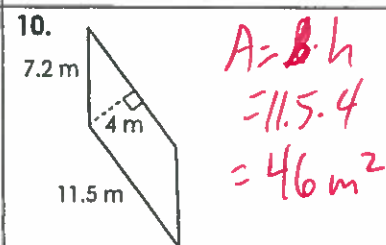
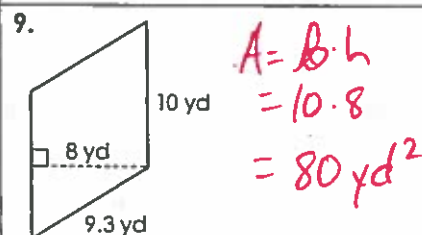
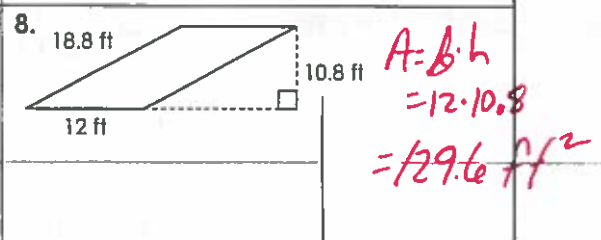
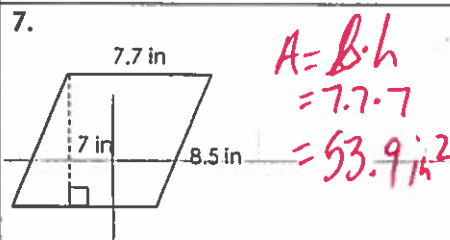
Area of Square

Area of a Rectangle

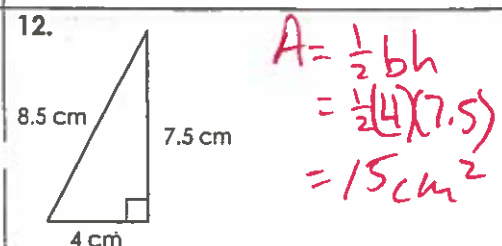
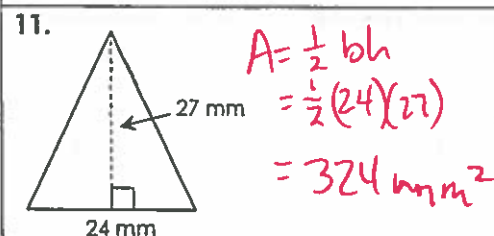
Find the area of each shape:




Area of a Parallelogram

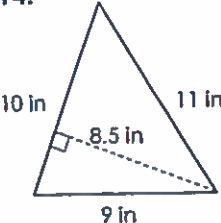


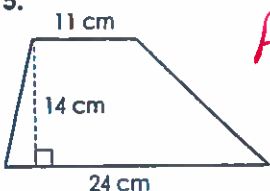
Area of a Triangle

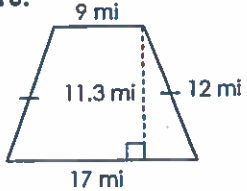


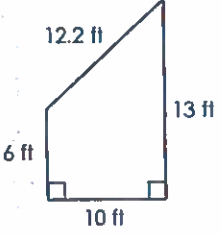
Area of a Trapezoid

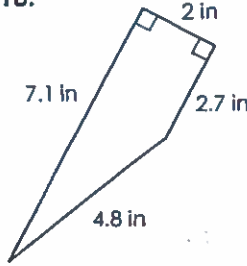
13.   $A = \frac{1}{2}bh$   
 $= \frac{1}{2}(5.8)(2.9)$   
 $= 8.41 \text{ km}^2$

14.   $A = \frac{1}{2}bh$   
 $= \frac{1}{2}(10)(8.5)$   
 $= 42.5 \text{ in}^2$

15.   $A = \frac{b_1 + b_2}{2} \cdot h$   
 $= \frac{11 + 24}{2} \cdot 14$   
 $= 175 \text{ cm}^2$

16.   $A = \frac{1}{2}(b_1 + b_2) \cdot h$   
 $A = \frac{1}{2}(9 + 17) \cdot 11.3$   
 $= \frac{1}{2}(26) \cdot 11.3$   
 $= 146.9 \text{ mi}^2$

17.   $A = \frac{1}{2}(b_1 + b_2) \cdot h$   
 $= \frac{1}{2}(6 + 13) \cdot 10$   
 $= 19.5$   
 $= 95 \text{ ft}^2$

18.   $A = \frac{1}{2}(b_1 + b_2) \cdot h$   
 $= \frac{1}{2}(2.7 + 7.1) \cdot 2$   
 $= (9.8) \cdot 1$   
 $= 9.8 \text{ in}^2$

GOING BACKWARDS

19. Find the base of a parallelogram with a height of 10.5 feet and an area of 189 ft<sup>2</sup>.

$$A = bh$$

$$\frac{189}{10.5} = \frac{b \cdot 10.5}{10.5}$$

$$b = 18 \text{ ft}$$

20. A triangle has an area of 220 square meters. Find its height if its base measures 20 meters.

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

$$220 = \frac{1}{2}(20)h$$

$$\frac{220}{10} = \frac{10h}{10}$$

$$h = 22 \text{ m}$$

21. A trapezoid has an area of 27.5 cm<sup>2</sup>. What is the measure of the height if the bases measure 7 cm and 4 cm?

$$A = \frac{1}{2}(b_1 + b_2) \cdot h$$

$$27.5 = \frac{1}{2}(7 + 4) \cdot h$$

$$27.5 = \frac{1}{2}(11) \cdot h$$

$$\frac{27.5}{5.5} = \frac{5.5 \cdot h}{5.5}$$

$h = 5 \text{ cm}$

22. Find the length of the second base of a trapezoid with one base measuring 8 inches, a height of 13 inches, and an area of 149.5 square inches.

$$A = \frac{1}{2}(b_1 + b_2) \cdot h$$

$$149.5 = \frac{1}{2}(8 + b_2) \cdot 13$$

$$\frac{149.5}{6.5} = \frac{(8 + b_2) \cdot 6.5}{6.5}$$

$$23 = 8 + b_2$$

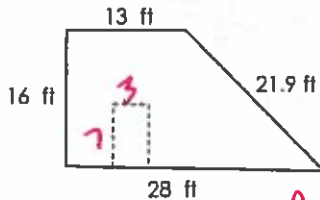
$$\frac{-8}{-8} \quad \frac{-8}{-8}$$

$$b_2 = 15$$

# PERIMETER & AREA Applications

Directions: Read each problem carefully and solve! Draw pictures when necessary.

- 1 A 7-foot by 3-foot doorway is to be cut into a trapezoid-shaped wall as shown below. Find the area of the wall with the door cut out.



$$A = \frac{1}{2}(b_1 + b_2) \cdot h - \Delta l \cdot w$$

$$\frac{1}{2}(13 + 28) \cdot 16 - 7 \cdot 3$$

$$41.8 - 21$$

$$307 \text{ ft}^2$$

- 2 Mr. Brinkley has a triangular-shaped area for his horses with sides measuring 30 meters, 64 meters, and 87 meters. He would like to enclose this area with a fence. If the fencing comes in 2.5-meter sections, how many sections of fence will be needed?

$$\begin{array}{r} 30 \\ + 64 \\ \hline 194 \\ + 87 \\ \hline 281 \end{array}$$

$$2.5 \overline{) 281.0}$$

$$\begin{array}{r} 112 \\ \underline{275} \\ 60 \end{array}$$

73 sections

- 3 An Olympic-sized pool measures 50 meters by 25 meters. If a coach asked his swimmers to swim around the pool three times, how far will they swim?

$$P = 2l + 2w$$

$$= 2(50) + 2(25)$$

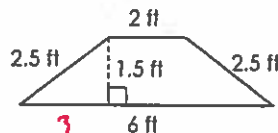
$$= 100 + 50$$

$$= 150$$

$$\times 3$$

$$450 \text{ meters}$$

- 4 Mrs. Humphrey needs to replace a broken window on her house. The window is shaped like a trapezoid with dimensions shown below. If glass costs \$21.50 per square foot, how much will the replacement window cost?



$$21.50$$

$$\times 6$$

$$\hline 129.00$$

\$129

$$A = \frac{1}{2}(b_1 + b_2) \cdot h$$

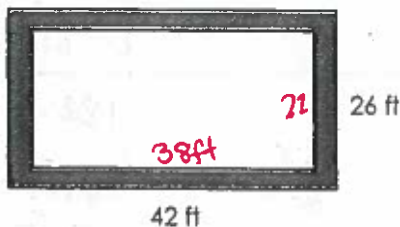
$$= \frac{1}{2}(2 + 6) \cdot 1.5$$

$$= \frac{1}{2}(8) \cdot 1.5$$

$$= 4 \cdot 1.5$$

$$= 6 \text{ ft}^2$$

Use for questions 5-6: Plans for a rectangle-shaped garden will include a 2-foot wide cement walkway surrounding it, as shown in the picture below.



- 5 If concrete costs \$4.50 per square foot, how much will it cost to fill the walkway?

$$\begin{array}{r} 142 \\ \times 26 \\ \hline 252 \\ 840 \\ \hline 1092 \end{array}$$

$$\begin{array}{r} 38 \\ \times 22 \\ \hline 76 \\ 760 \\ \hline 836 \end{array}$$

$$\begin{array}{r} 1092 \\ - 836 \\ \hline 256 \end{array}$$

$$\begin{array}{r} 256 \\ \times 4.50 \\ \hline 1280 \\ 1280 \\ \hline 1152 \end{array}$$

\$1,152

- 6 For the holiday season, lights will be strung along each side of the walkway. If one box of lights will cover 10 feet of walkway, how many boxes are needed?

$$P = 2l + 2w$$

$$= 2(42) + 2(26)$$

$$= 84 + 52$$

$$= 136$$

$$10 \overline{) 136.0}$$

$$\begin{array}{r} 13 \\ \underline{130} \\ 60 \\ \underline{60} \\ 0 \end{array}$$

14 boxes

7 Mr. Marsh plans to tile the floor in his 6-foot by 8-foot front hall. If each tile is an 8-inch square, what is the minimum number of tiles needed to cover the floor?

$6 \times 8 = 48$   
 $\times 12$   
 $196$   
 $480$   
 $576$   
 $8 \overline{)576}$   
 $56$   
 $16$

72 tiles

8 The total area of a picture frame, including the glass and 1.5-inch wide wooden frame, is 238 square inches. If the frame is 17 inches tall, what are dimensions of the maximum picture size that will fit in the frame?

$A = l \cdot w$   
 $238 = 17 \cdot w$   
 $\frac{238}{17} = \frac{17 \cdot w}{17}$   
 $w = 14$

$A = l \cdot w$   
 $= 11 \cdot 14$   
 $= 154 \text{ in}^2$

9 The intersections of three streets form a triangle as shown below. If Kelly decides to make this triangle her running route today, how far will she run?

$a^2 + b^2 = c^2$   
 $6^2 + 2.5^2 = c^2$   
 $36 + 6.25 = c^2$   
 $42.25 = c^2$   
 $c = 6.5$

$6 + 6.5 + 2.5 = 15$   
 $15 \text{ mi}$

10 Mrs. Watson has 30 desks in her math class, each shaped like the trapezoid shown below. She plans to cover each one with bulletin board paper for a project. What is the minimum amount of paper she will need?

$A = \frac{1}{2}(b_1 + b_2)h$   
 $= \frac{1}{2}(22 + 26) \cdot 18$   
 $= \frac{1}{2}(48) \cdot 18$

11 One of the display boards at the Dallas Cowboys' stadium has a screen size of 11,393 square feet. If the width of the board is 160 feet, find its height.

$A = l \cdot w$   
 $11393 = l \cdot 160$   
 $\frac{11393}{160} = \frac{l \cdot 160}{160}$   
 $h = 71.2 \text{ ft}$

12 The vertical tail on an airplane is shaped like a trapezoid, with dimensions shown below. If each side of the tail is to be painted, and one can of paint covers 150 square feet, how many cans of paint are needed?

$\frac{1}{2}(6 + 13.6) \cdot 19.2$   
 $\frac{1}{2}(19.6) \cdot 19.2$   
 $9.8(19.2)$   
 $188.16$   
 $\frac{188.16}{150}$   
 $2.5$   
 $3 \text{ cans}$