
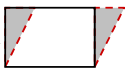


Lesson 9-1

Objective - To find the perimeter and area of triangles and special quadrilaterals.


Formulas

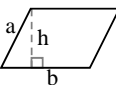
<u>Figure</u>	<u>Perimeter</u>	<u>Area</u>
Rectangle 	$P = 2L + 2w$	$A = L \cdot w$


Parallelogram 		

Objective - To find the perimeter and area of parallelograms.

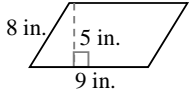
Formulas

<u>Figure</u>	<u>Perimeter</u>	<u>Area</u>
Rectangle 	$P = 2L + 2w$	$A = L \cdot w$

Parallelogram 	$P = 2a + 2b$	$A = b \cdot h$



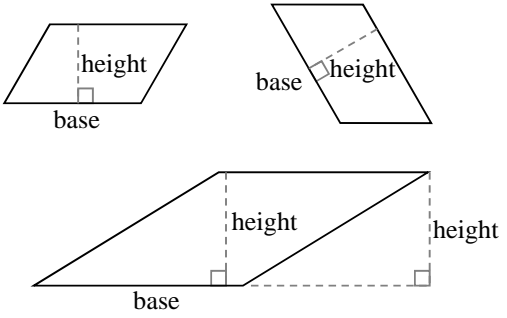
Find the perimeter and area of the figure below.



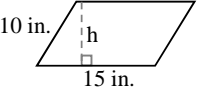
$P = 2a + 2b$
 $P = 2 \cdot 8 + 2 \cdot 9$
 $P = 16 + 18$
 $P = 34 \text{ inches}$

$A = b \cdot h$
 $A = 9 \cdot 5$
 $A = 45 \text{ square inches}$
 $A = 45 \text{ sq. in.}$
 $A = 45 \text{ in}^2$
 ~~$A = 45^2 \text{ in}$~~

Base and Height Are Always Perpendicular



Find the height of the parallelogram.

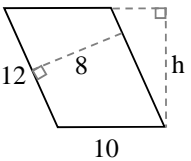


Area = 135 square inches

$A = b \cdot h$
 $\frac{135}{15} = \frac{15 \cdot h}{15}$
 $9 = h$
 $h = 9 \text{ inches}$

Challenge Problem

Find the height, h.



$A = b \cdot h$
 $A = 12 \cdot 8 = 96 \text{ un}^2$

$A = b \cdot h$
 $\frac{96}{10} = \frac{10 \cdot h}{10}$
 $9.6 = h$

Lesson 9-1

Graph the coordinates A(-2,2), B(1,4), C(1,-1) and D(-2,-3) and find the area of the figure shown.

$A = b \cdot h$
 $A = 5 \cdot 3$
 $A = 15 \text{ un}^2$

Thought Provoking Question
Find the area and perimeter of each figure.

$A = 28 \text{ un}^2$
 $P = 24 \text{ un}$

Thought Provoking Question
Find the area and perimeter of each figure.

$A = 28 \text{ un}^2$
 $P = 24 \text{ un}$
 $A = 14 \text{ un}^2$

Thought Provoking Question
Find the area and perimeter of each figure.

$A = 28 \text{ un}^2$
 $P = 24 \text{ un}$
 $A = 14 \text{ un}^2$
 $P = 12 + 4\sqrt{2} \text{ un}$

Triangles and Trapezoids

$A = \frac{1}{2} b \cdot h$

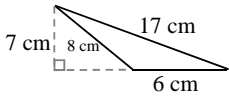
Find the perimeter and area of the triangle.

Area
 $A = \frac{1}{2} b \cdot h$
 $A = \frac{1}{2} (9 \cdot 4)$
 $A = \frac{1}{2} (36)$
 $A = 18 \text{ cm}^2$

Perimeter
 $P = 6 + 8 + 9$
 $P = 23 \text{ cm}$

Lesson 9-1

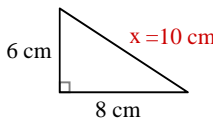
Find the perimeter and area of the triangle.



Perimeter
 $P = 6 + 8 + 17$
 $P = 31 \text{ cm}$

Area
 $A = \frac{1}{2}b \cdot h$
 $A = \frac{1}{2}(6 \cdot 7)$
 $A = \frac{1}{2}(42)$
 $A = 21 \text{ cm}^2$

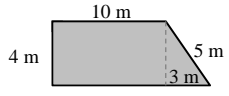
Find the area and perimeter of the triangle.



Area
 $A = \frac{1}{2}b \cdot h$
 $A = \frac{1}{2}(6 \cdot 8)$
 $A = \frac{1}{2}(48) = 24 \text{ cm}^2$

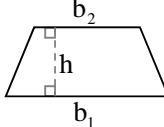
Perimeter
 $a^2 + b^2 = c^2$
 $6^2 + 8^2 = x^2$
 $36 + 64 = x^2$
 $100 = x^2$
 $x = \sqrt{100} = 10$
 $P = 6 + 8 + 10$
 $P = 24 \text{ cm}$

Use formulas to find the area of the figure below.

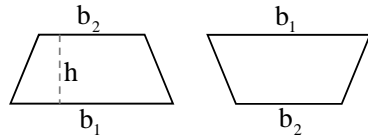


Area
 $\text{Area}_1 = l \cdot w$
 $4 \cdot 10 = 40$
 $+$
 $\text{Area}_2 = \frac{1}{2}b \cdot h$
 $= \frac{1}{2} \cdot 4 \cdot 3 = 6$
 Total Area = 46 sq. m

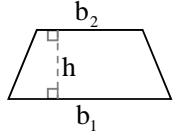
Area of a Trapezoid



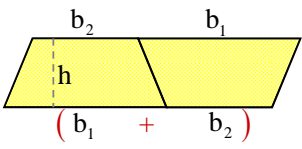
$A = \frac{1}{2}(b_1 + b_2) \cdot h$



Area of a Trapezoid

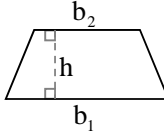


$A = \frac{1}{2}(b_1 + b_2) \cdot h$

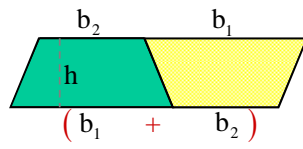


$A = b \cdot h$
 $A = (b_1 + b_2) \cdot h$

Area of a Trapezoid



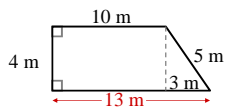
$A = \frac{1}{2}(b_1 + b_2) \cdot h$



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

Lesson 9-1

Use a formula to find the area of the figure below.



Area

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

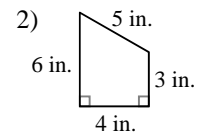
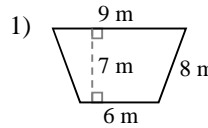
$$A = \frac{1}{2}(13 + 10) \cdot 4$$

$$A = \frac{1}{2}(23) \cdot 4$$

$$A = \frac{1}{2} \cdot 4 \cdot (23)$$

$$A = 2 \cdot (23) = 46 \text{ m}^2$$

Find the area of the trapezoids.



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

$$A = \frac{1}{2}(9 + 6) \cdot 7$$

$$A = \frac{1}{2}(15) \cdot 7$$

$$A = 7.5 \cdot 7 = 52.5 \text{ m}^2$$

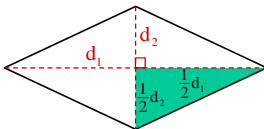
$$A = \frac{1}{2}(b_1 + b_2) \cdot h$$

$$A = \frac{1}{2}(6 + 3) \cdot 4$$

$$A = \frac{1}{2}(9) \cdot 4$$

$$A = \frac{1}{2} \cdot 36 = 18 \text{ in}^2$$

Rhombuses and Kites



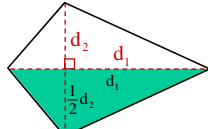
$A = 4$ Triangles

$$A = 4 \left(\frac{1}{2} b \cdot h \right)$$

$$A = 4 \left(\frac{1}{2} \left(\frac{1}{2} d_1 \right) \left(\frac{1}{2} d_2 \right) \right)$$

$$A = \frac{4}{8} (d_1)(d_2)$$

$$A = \frac{1}{2} d_1 \cdot d_2$$



$A = 2$ Triangles

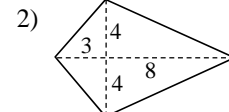
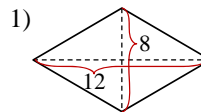
$$A = 2 \left(\frac{1}{2} b \cdot h \right)$$

$$A = 2 \left(\frac{1}{2} (d_1) \left(\frac{1}{2} d_2 \right) \right)$$

$$A = \frac{2}{4} (d_1)(d_2)$$

$$A = \frac{1}{2} d_1 \cdot d_2$$

Find the area of the quadrilaterals below.



$$A = \frac{1}{2} d_1 \cdot d_2$$

$$A = \frac{1}{2} (12) \cdot 8$$

$$A = \frac{1}{2} (96)$$

$$A = 48 \text{ un}^2$$

$$A = \frac{1}{2} d_1 \cdot d_2$$

$$A = \frac{1}{2} (3 + 8)(4 + 4)$$

$$A = \frac{1}{2} (11 \cdot 8)$$

$$A = 44 \text{ un}^2$$