



Math Virtual Learning

**Pre-Algebra**

**Area of Polygons**

May 7, 2020



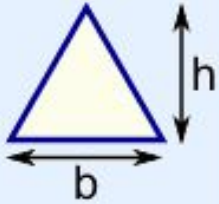
## Grade 7/Area of Polygons Lesson: May 7, 2020

**Objective/Learning Target: Find area of triangles, quadrilaterals, and other polygons composed of triangles and rectangles.**

**Let's Get Started:**

Watch Video: [Area of Triangles and Quadrilaterals](#)

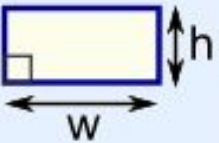
# How to Find Area



## Triangle

$$\text{Area} = \frac{1}{2} \times b \times h$$

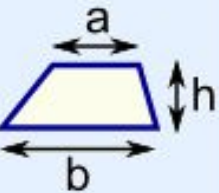
b = base  
h = vertical height



## Rectangle

$$\text{Area} = w \times h \text{ or Area} = L \times W$$

w = width  
h = height

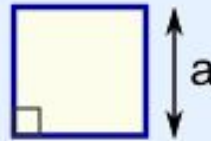


## Trapezoid (US)

## Trapezium (UK)

$$\text{Area} = \frac{1}{2}(a+b) \times h$$

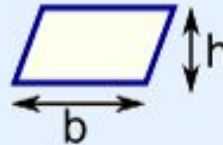
h = vertical height



## Square

$$\text{Area} = a^2$$

a = length of side



## Parallelogram

$$\text{Area} = b \times h$$

b = base  
h = vertical height



## Circle

$$\text{Area} = \pi \times r^2$$
$$\text{Circumference} = 2 \times \pi \times r$$

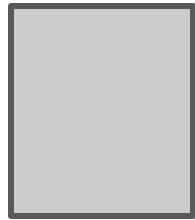
r = radius

# Practice:

Find the area of the figures.

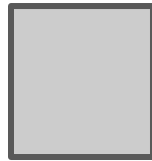


Divide the figures into regular shapes.



$$L \times W = A$$
$$16 \times 17 = 272$$

+



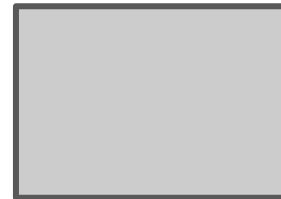
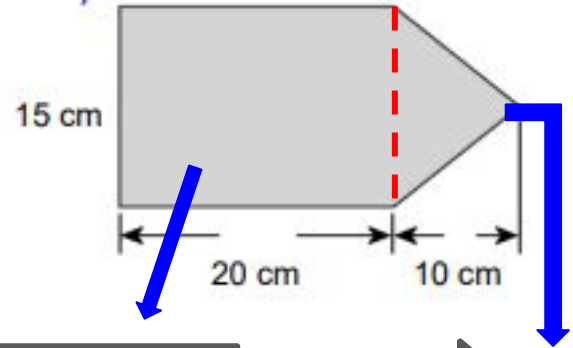
$$L \times W = A$$
$$14 \times 14 = 196$$

Find the area of each shape.

$$272 + 196 = 468 \text{ in}^2$$

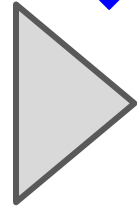
Correct Answer

Add the area of the shapes.



$$L \times W = A$$
$$20 \times 15 = 300$$

+



$$\frac{1}{2} b \times h = A$$
$$\frac{1}{2} (15) \times 10 = 75$$

$$300 + 75 = 375 \text{ cm}^2$$

Correct Answer

## Practice:

Go to these websites:

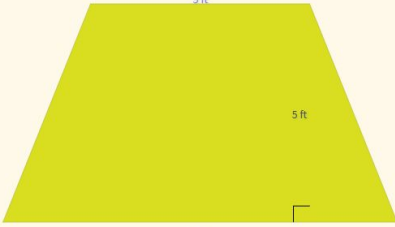
[Triangles and Trapezoids](#)

[Rectangles and Parallelograms](#)

[Complex Figures](#)

1. Look at the question carefully.
2. Make sure to have pencil and paper ready.
3. Solve the problem.
4. Type in the answer and then click “Answer”.

What is the area?



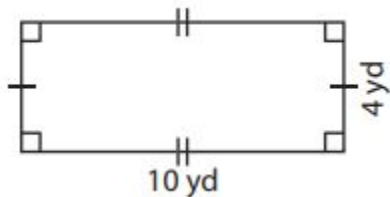
ft<sup>2</sup>

Answer

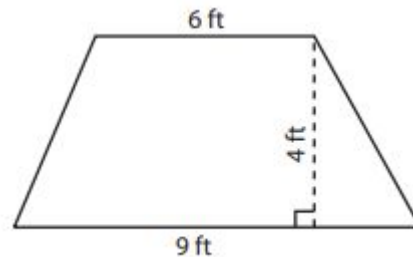
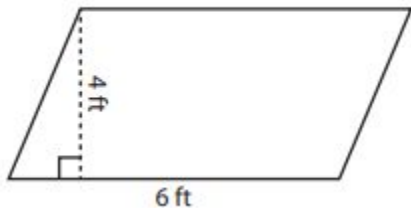
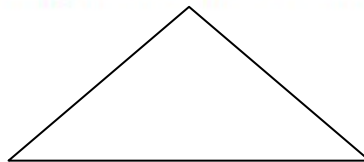
# Practice:

Answer the questions on a piece of paper.

Find the area of the given figures.



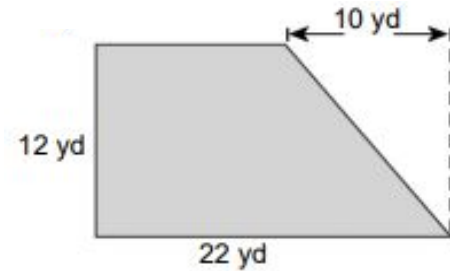
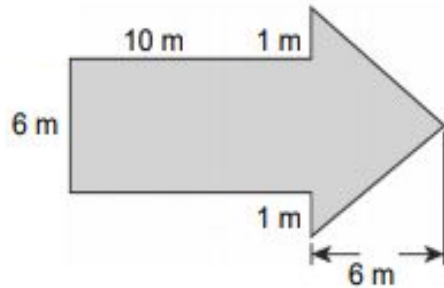
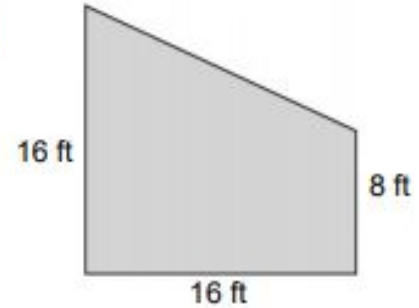
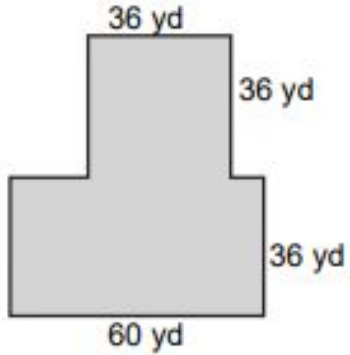
Find the area of the triangle whose base is 32 inches and height is 16 inches.



# Practice:

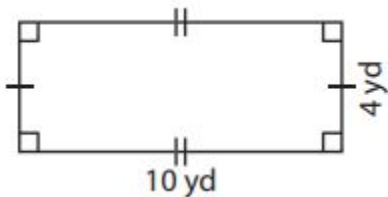
Answer the questions on a piece of paper.

Find the area of the given figures.



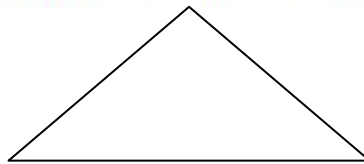
# Answer Key:

Once you have completed the problems, check your answers here.

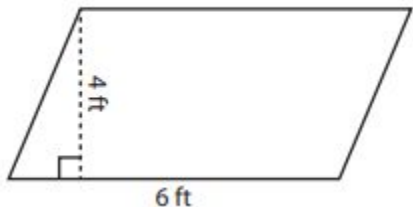


$$L \times W = A$$
$$10 \times 4 = 40 \text{ yd}^2 \leftarrow \text{Correct Answer}$$

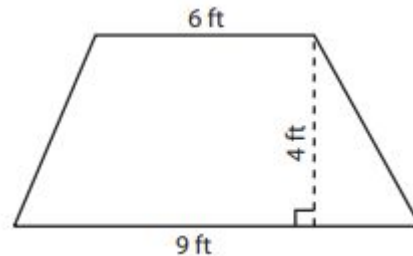
Find the area of the triangle whose base is 32 inches and height is 16 inches.



$$\frac{1}{2} b \times h = A$$
$$\frac{1}{2} (32) \times 16 = 256 \text{ in}^2 \leftarrow \text{Correct Answer}$$



$$b \times h = A$$
$$6 \times 4 = 24 \text{ ft}^2 \leftarrow \text{Correct Answer}$$

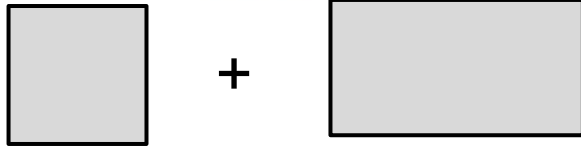
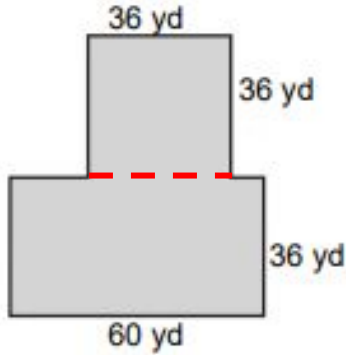


$$\frac{1}{2} (\text{base a} + \text{base b}) \times h = A$$
$$\frac{1}{2} (9 + 6) \times 4 = 30 \text{ ft}^2 \leftarrow \text{Correct Answer}$$



# Answer Key:

Once you have completed the problems, check your answers here.

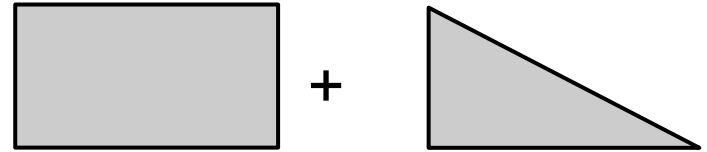
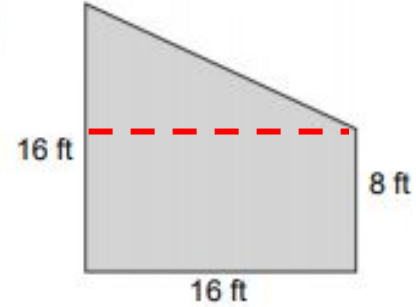


$$L \times W = A$$
$$36 \times 36 = 1296$$

$$L \times W = A$$
$$60 \times 36 = 2160$$

$$1296 + 2160 = 3456 \text{ yd}^2$$

← Correct Answer



$$L \times W = A$$
$$16 \times 8 = 144$$

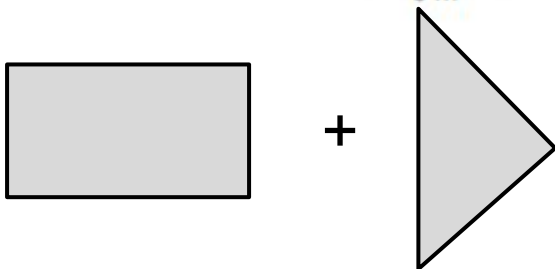
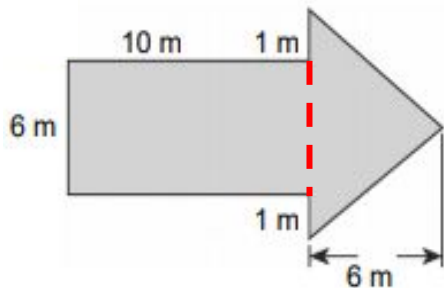
$$\frac{1}{2} b \times h = A$$
$$\frac{1}{2} (16) \times 8 = 64$$

$$144 + 64 = 208 \text{ ft}^2$$

← Correct Answer

# Answer Key:

Once you have completed the problems, check your answers here.

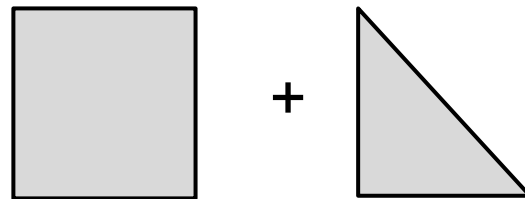
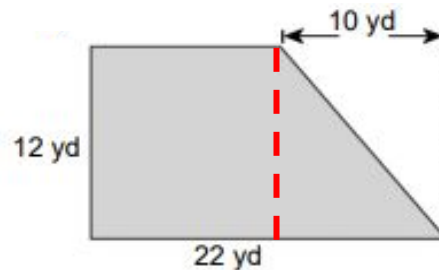


$$L \times W = A$$
$$10 \times 6 = 30$$

$$\frac{1}{2} b \times h = A$$
$$\frac{1}{2} (6+1+1) \times 6 = 24$$

$$30 + 24 = 54 \text{ m}^2$$

← Correct Answer



$$L \times W = A$$
$$(22-10) \times 12 = 144$$

$$\frac{1}{2} b \times h = A$$
$$\frac{1}{2} (10) \times 12 = 60$$

$$144 + 60 = 204 \text{ yd}^2$$

← Correct Answer

## **Additional Practice:**

Click on the links below to get additional practice and to check your understanding!

[IXI](#) - Practice Quadrilaterals

[IXI](#) - Practice Triangles

[Open Middle](#) - Challenge Triangles

[Open Middle](#) - Challenge Quadrilaterals

# Additional Practice: Challenge

Click on the links below to get additional practice and to check your understanding!

## [Khan Academy](#) - Complex Figures

1. Watch the video and then work on the 4 practice problems.
2. Type in your answer and then click “Check”.
3. Click “Next question”.
4. If you get an answer incorrect, click “Get help” for step by step hints.

