Chapter 9

Perimeter, Area, and Volume

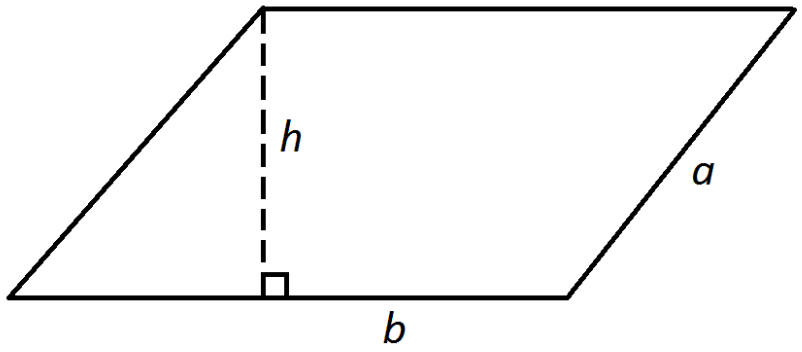
9-1A: Area of Parallelograms

I can…

find the areas and missing dimensions of parallelograms.

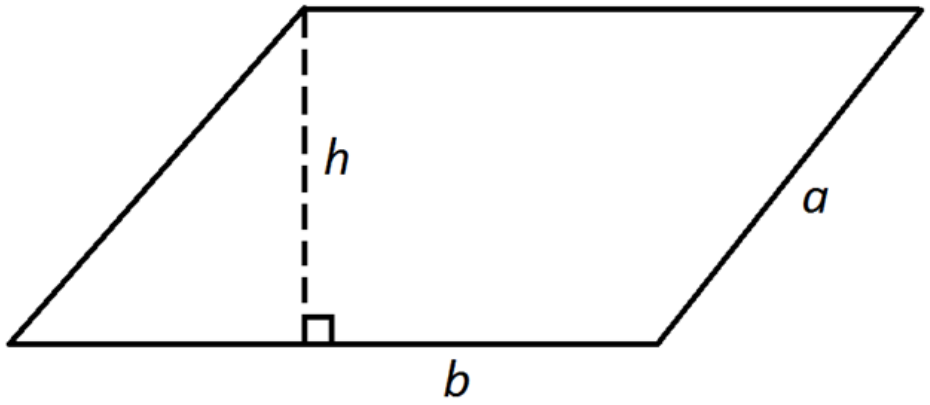
Mini-lab

- Materials:
  - Graph paper
  - Pencil
  - scissors



- Draw a parallelogram and cut out
- Draw in the height
- Cut along this line
- Move the triangle to the other side of the figure
- What shape do you have?

Area of a Parallelogram:

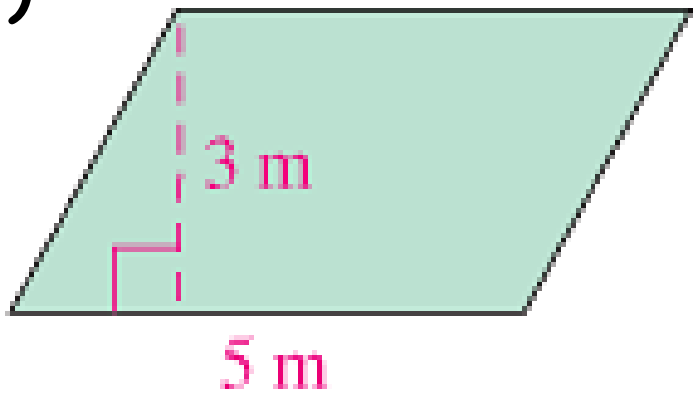


$$Area = base \bullet height$$

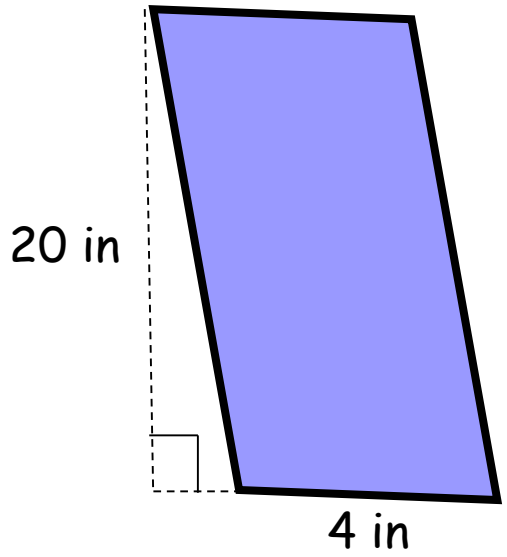
$$A = bh$$

Examples: Find the area.

1)



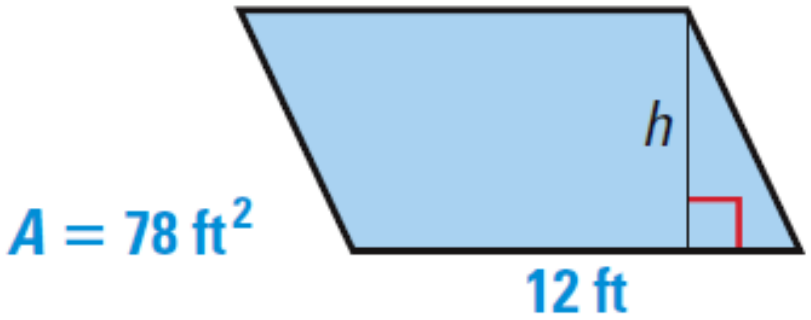
2)



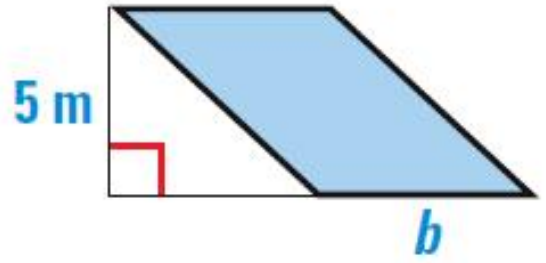
*Don't forget units!

Examples: Find missing dimension.

1)



2) $A = 30\ m^2$



Homework:

p.525

Group 1: #7-16, 27, 30-34

Group 2: #7-17 odd, 21, 25, 30-34

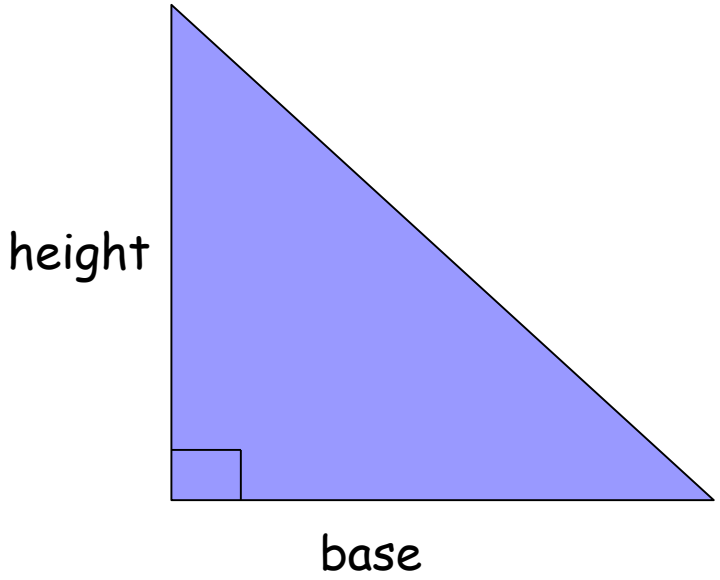
Group 3: #7-25 odd, 30-34

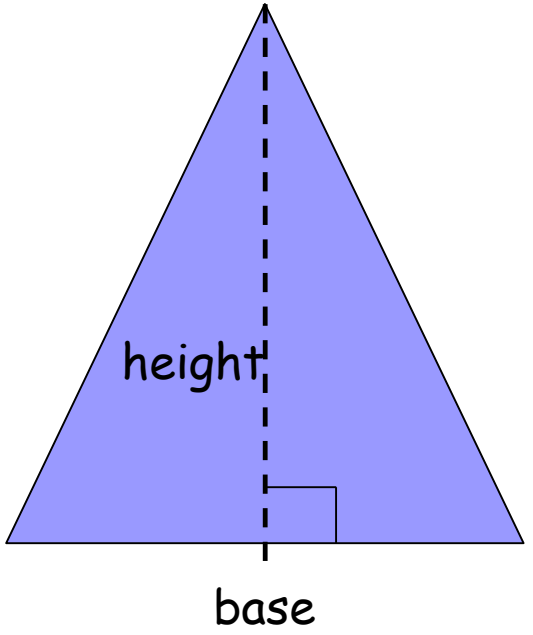
9-1C: Area of Triangles

I can…
find the areas and missing dimensions of triangles.

Area of a Triangle:

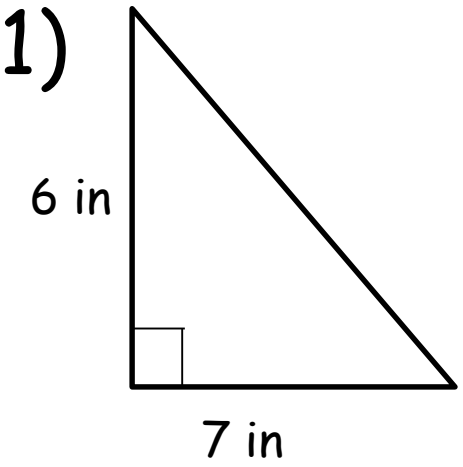
$$A = \frac{1}{2}bh$$



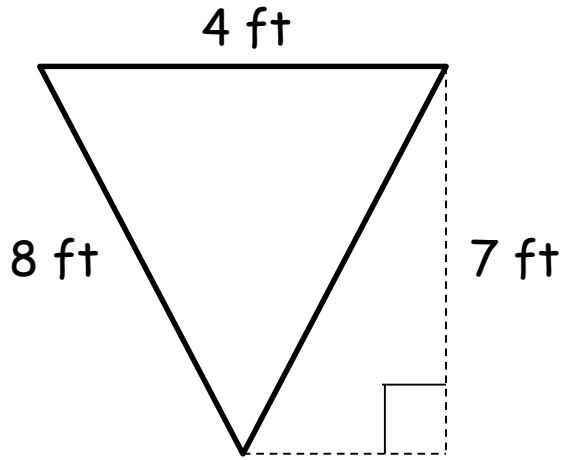


Examples: Find the area.

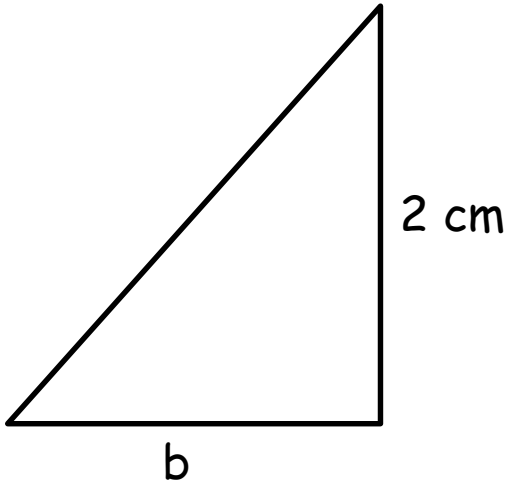
1)



2)



Example: Find the missing measure.



$A = 5\ cm^2$

Example: If the front of a tent has an area of 7.5 ft^2 and the base is 5 ft, how tall is the tent?

Homework:

Workbook p. 145

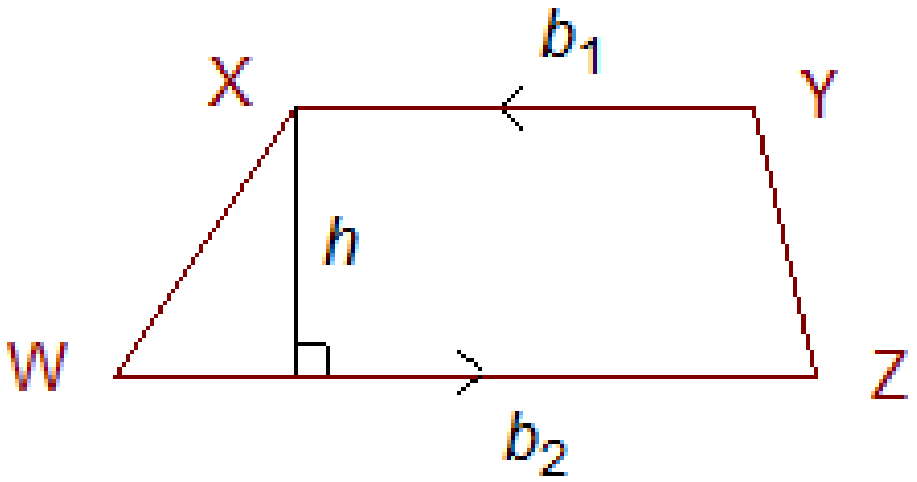
9-1D: Area of Trapezoids

I can…
find the area of trapezoids.

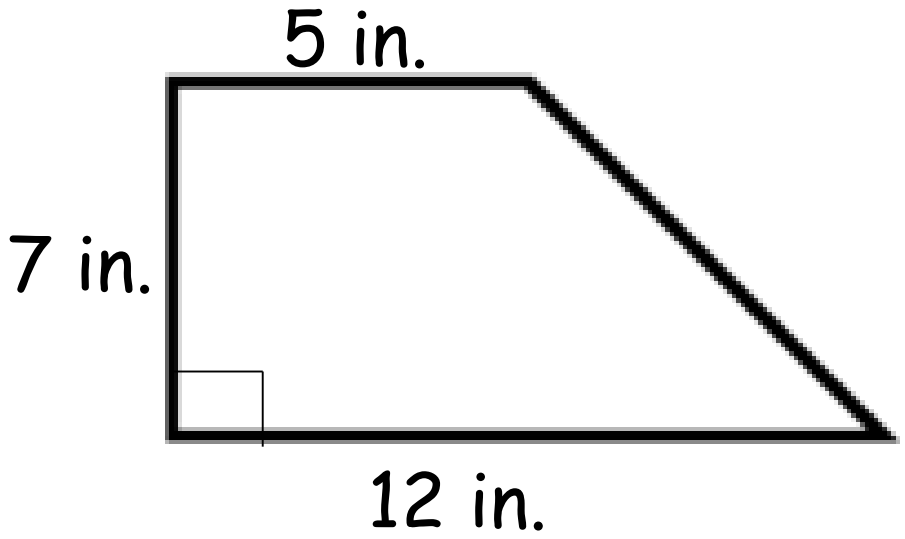
Trapezoid Cut-out Activity

Formula for Area of a Trapezoid

$$A = \frac{1}{2} \bullet h \bullet (b_1 + b_2) \quad \textbf{OR} \quad A = \frac{h \bullet (b_1 + b_2)}{2}$$

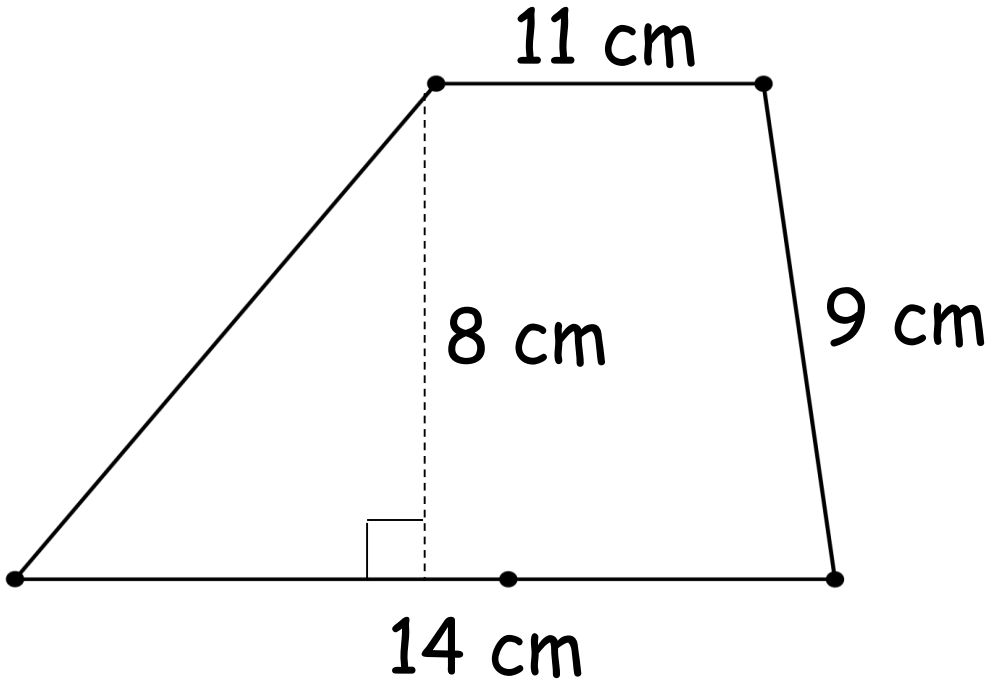


Example: Find the area of the trapezoid.



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

Example: Find the area of the trapezoid.



$$A = \frac{1}{2} \bullet h \bullet \left(b_1 + b_2 \right)$$

Homework:

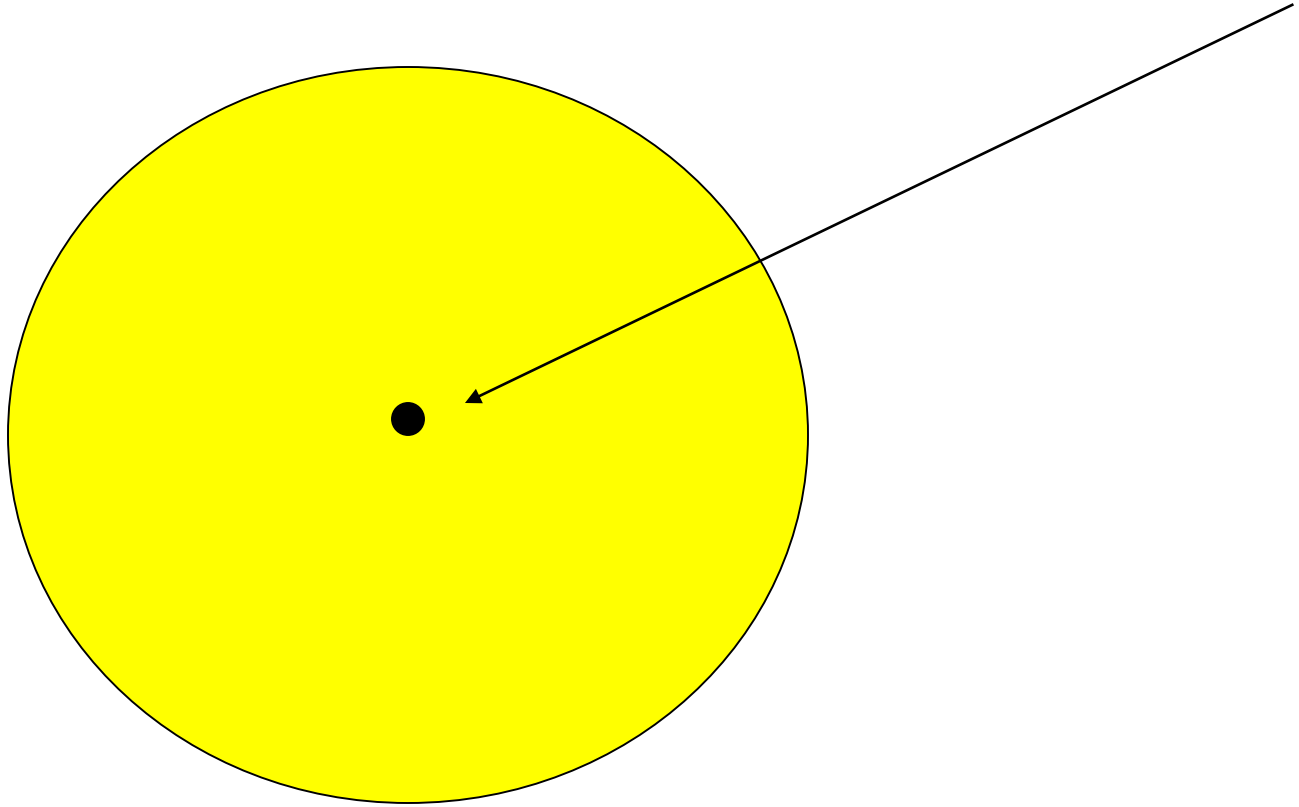
Worksheet

9-2B: Circumference

I can…
estimate and find the circumference of circles.

Circles

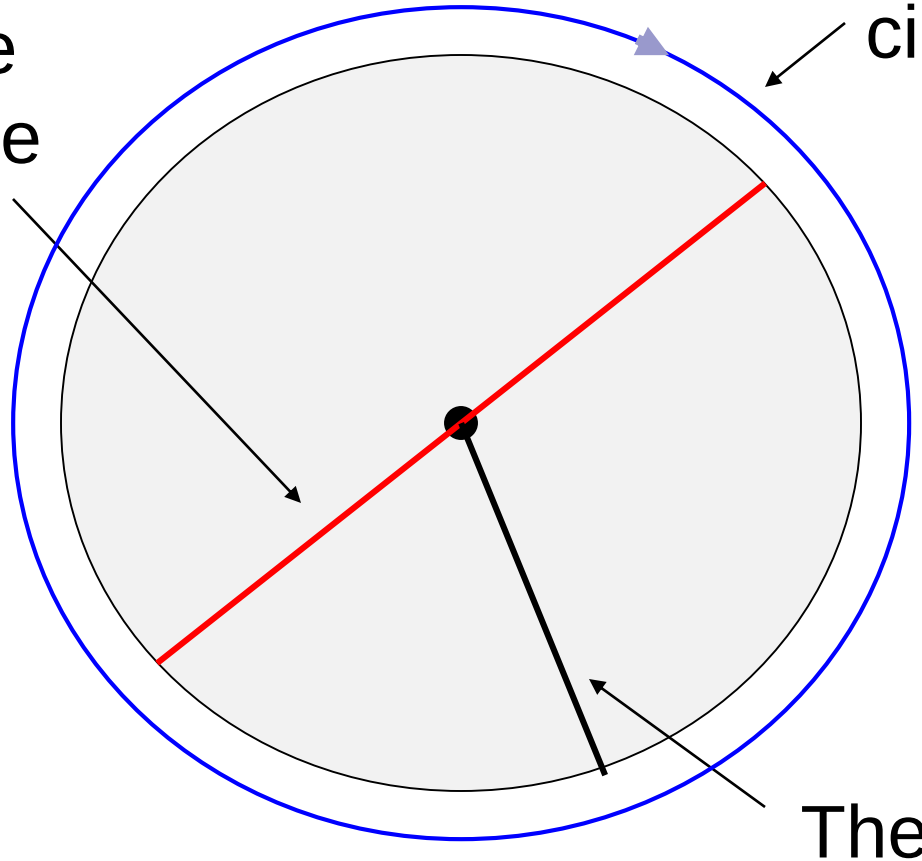
- A circle is the set of all points in a plane that are the same distance from a given point, called the center.



Circles

The circumference (C) is the distance around a circle.

The diameter (d) is the distance across a circle through the center of the circle.



The radius (r) is the distance from the center to any point on the circle.

More About Circles…

- Pi is a non-terminating and non-repeating number represented by the Greek letter
- π (pi)
- 3.14 is often used as an approximation for π.

Diameter and radius are related.

The diameter is twice the radius, so:

$d = 2r$ or $r=d/2$

Example: The diameter of a circle is 10. What is the radius?

Example: The radius of a circle is 8. What is the diameter?

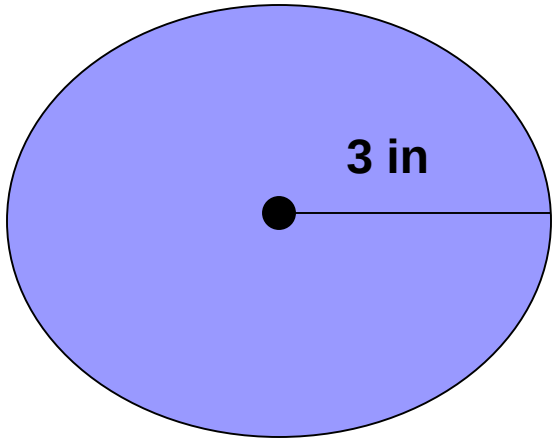
Circumference Formulas:

$$C = \pi d \text{ OR } C = 2\pi r$$

Both formulas find circumference – depends on what you are given in the problem.

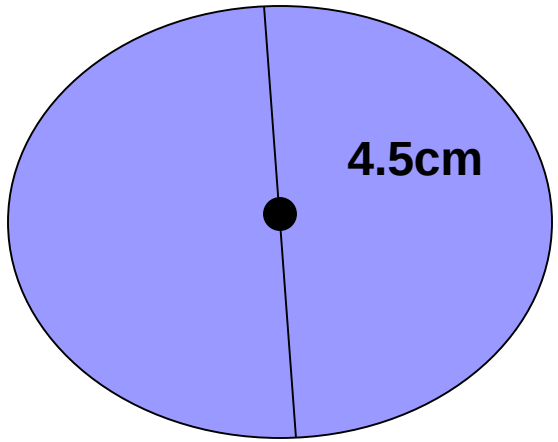
Find Circumference

- Which formula for C will you use?
- $C = 2\pi r$
- $C = 2(3.14)3$
- $C = 18.84$ in



Find the Circumference

- Which formula for C will you use?
- $C = \pi d$
- $C = 3.14(4.5)$
- $C = 14.1\text{cm}$



Homework:

p.544 #11-21 odd, 23-37 all

9-2D: Area of Circles

I can…

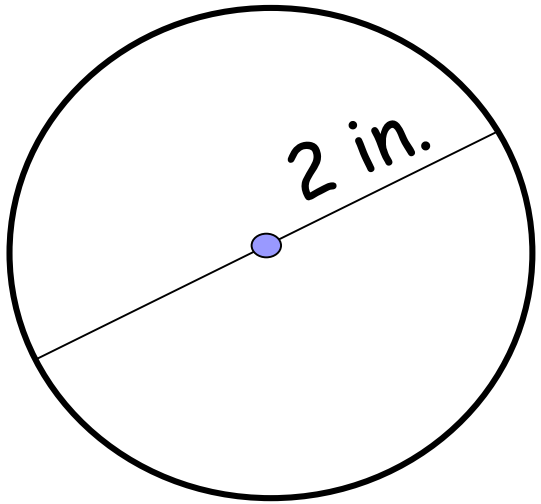
find the area of circles.

Formula for Area of Circle:

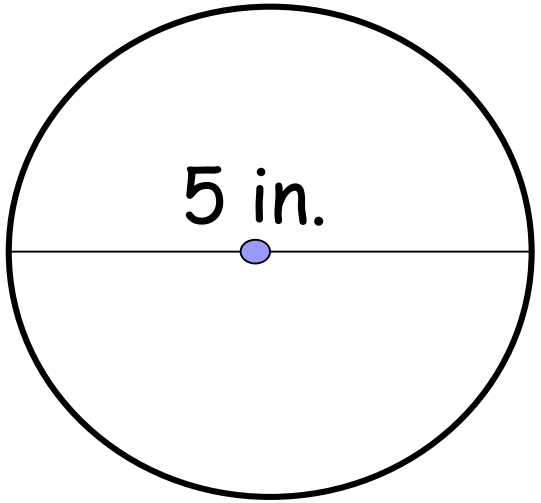
$$A = \pi r^2$$

Note: If you are given the diameter instead of the radius; divide the diameter by 2 to get the radius.

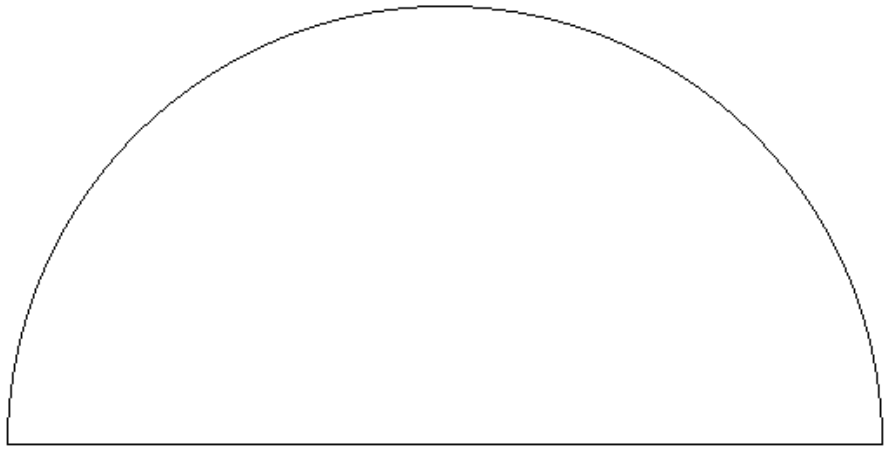
Example: Find the area of the circle.



Example: Find the area of the circle.



Example: Find the area of the semicircle.



*a semicircle is half of a full circle

Homework:

Workbook p. 151

9-3A: Perimeter of Composite Figures

I can…

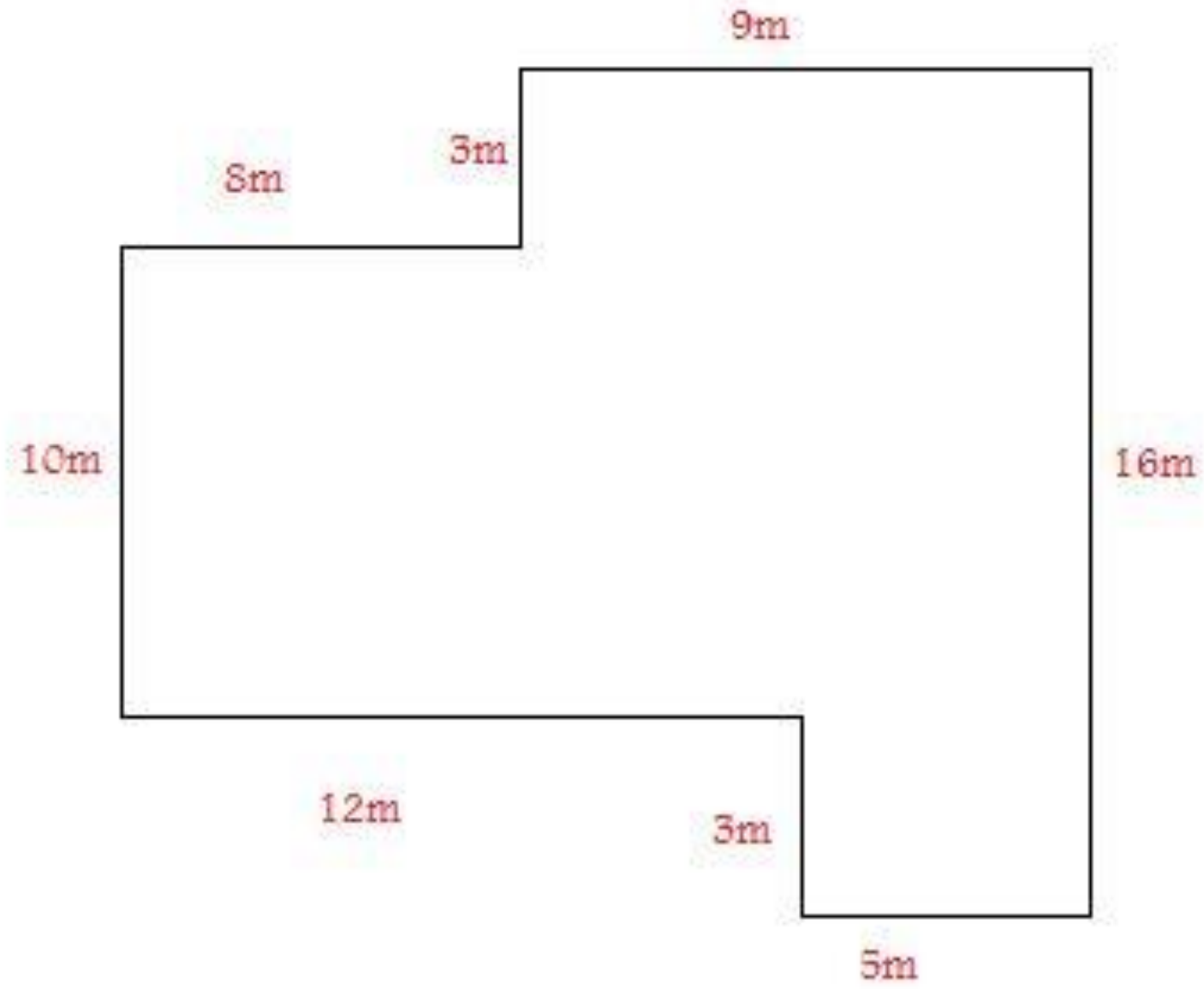
find the perimeter of a composite figure.

Vocabulary:

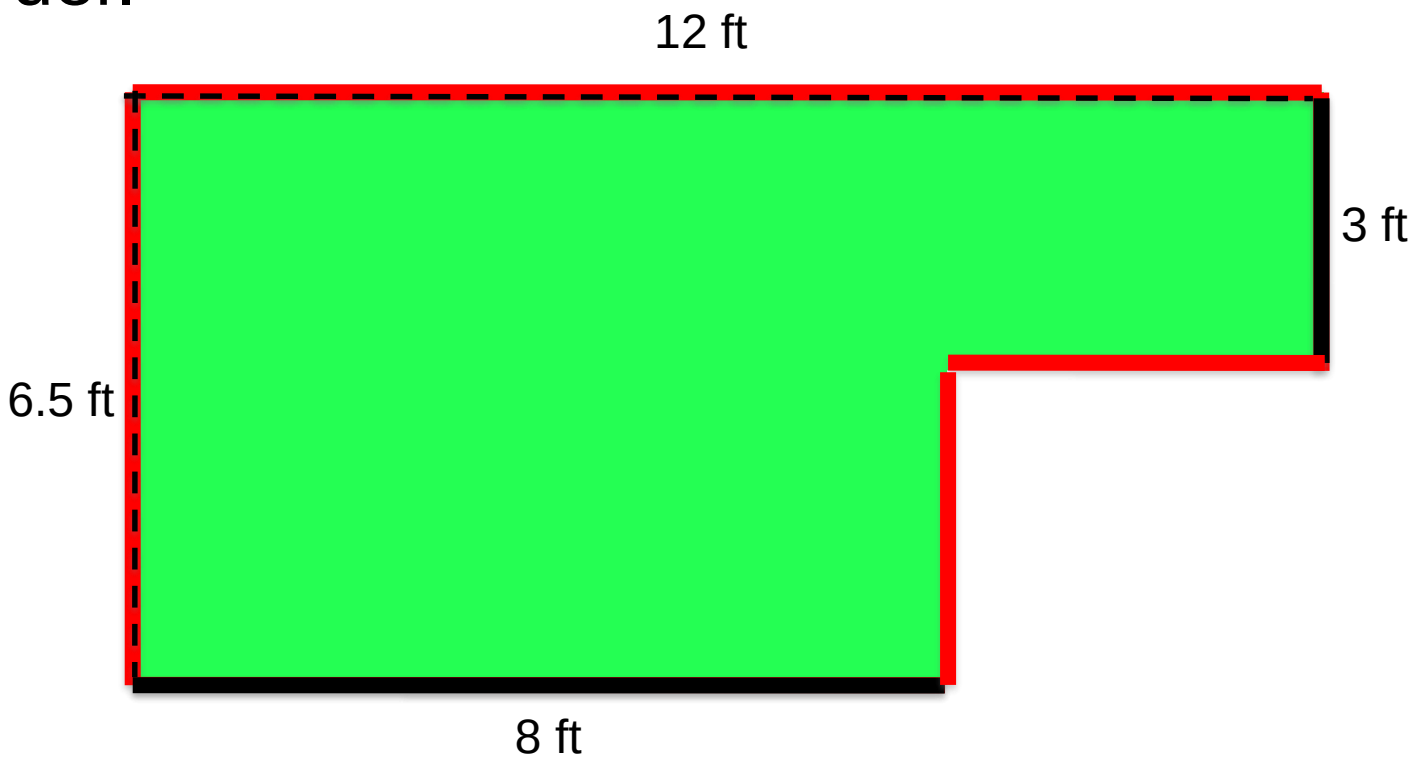
Perimeter: the distance around a figure (walk the rim)

Composite figure: a figure made of triangles, quadrilaterals, and semicircles (more than one figure)

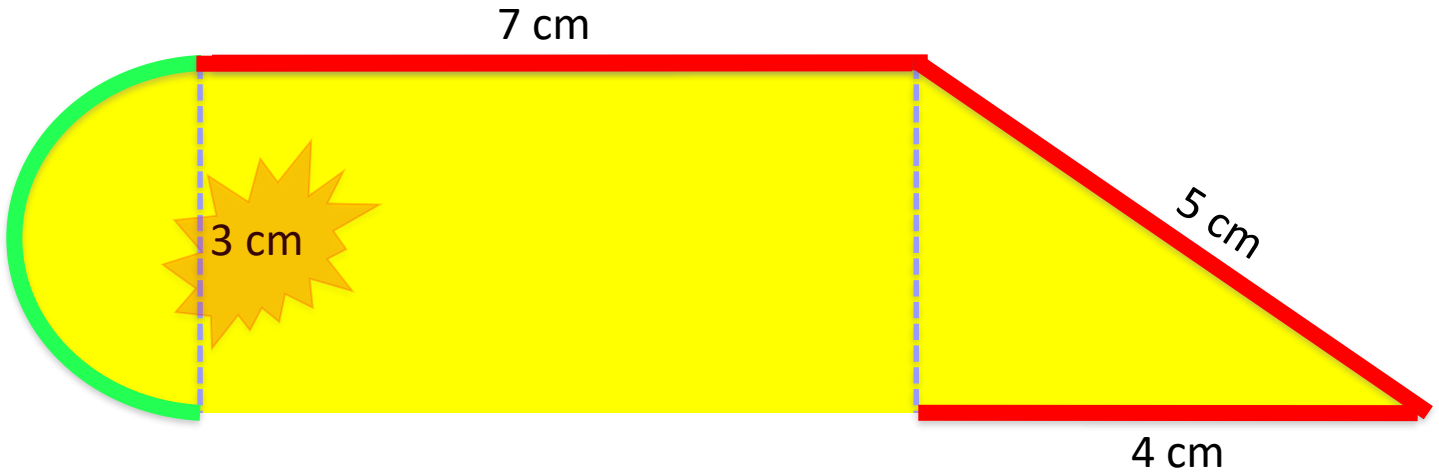
Example: Find the Perimeter.



Michaela is putting a wallpaper border around her bedroom. She must find the _____ of her bedroom in order to purchase the correct amount of border.



Find the Perimeter:



Add up all the distances around the edges/rim

Homework:

Worksheet

9-3C: Area of Composite Figures

I can…

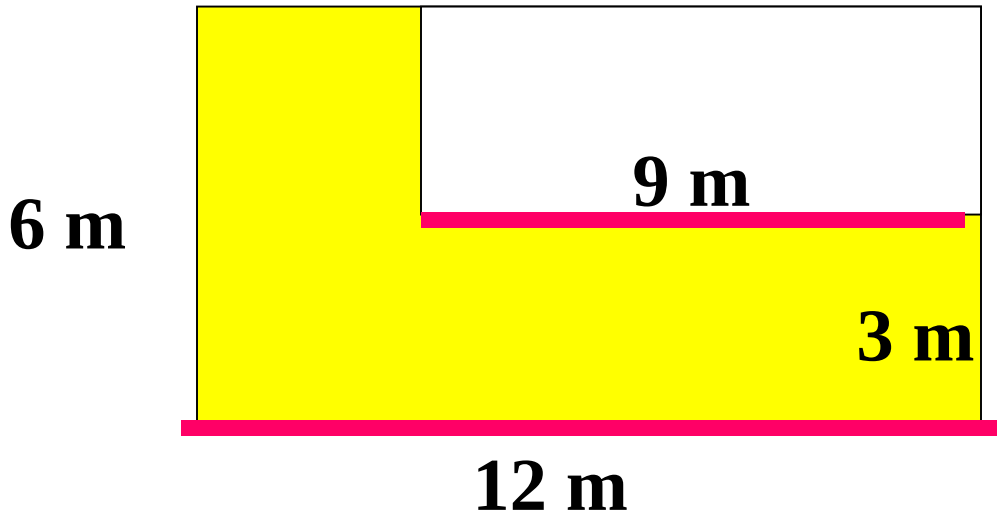
find the area of a composite figure.

How to find area of composite figures:

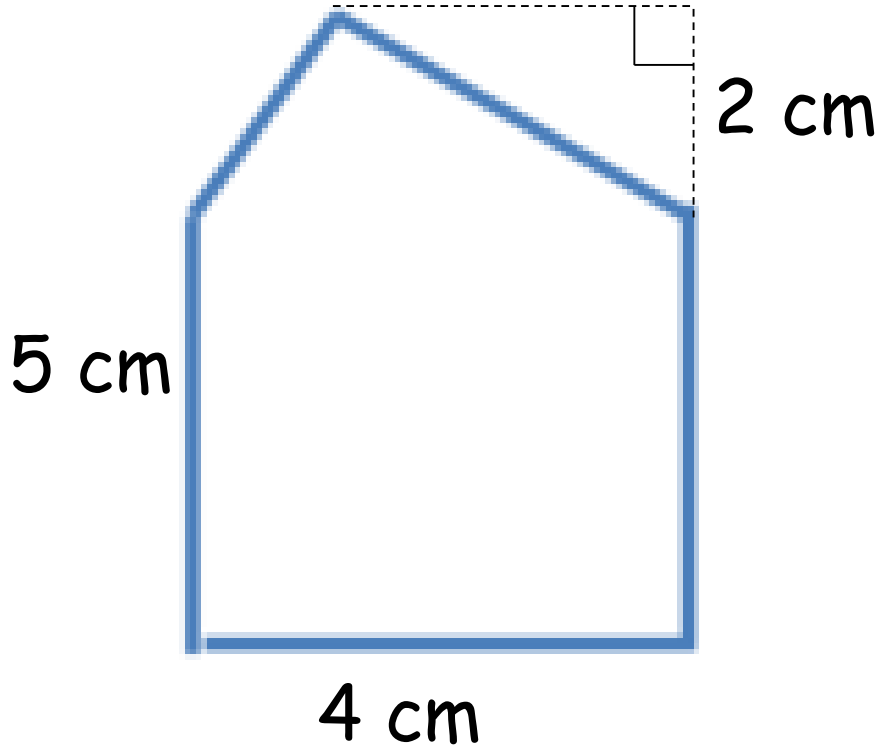
1) Divide the figure into shapes you already know.
2) Find the area of each shape.
3) Add the areas.

Usually more than one way to get the answer.

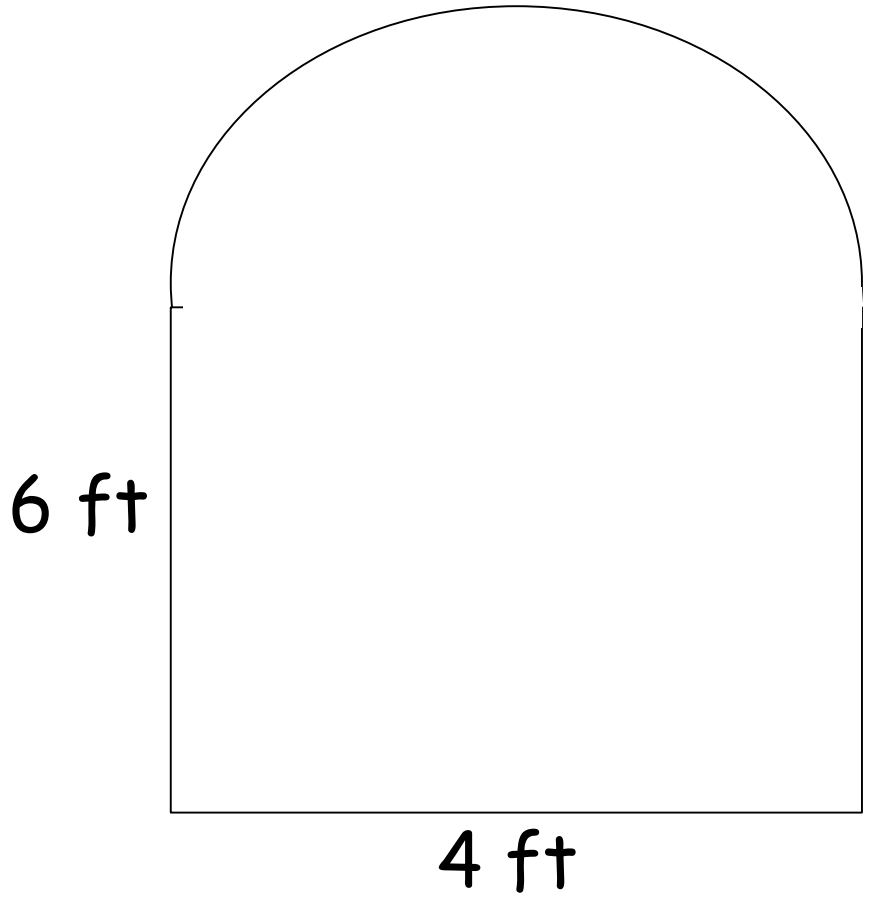
Example: Find the area of the figure.



Example: Find the area of the figure.



Example: Find the area of the figure.



Homework:

worksheet

Midchapter Test

9-4B: Volume of Rectangular Prisms

I can…

find the volume of rectangular prisms.

Homework:

p.572 #1-23 odd, 30-33

9-4D: Surface Area of Rectangular Prisms

I can…

find the surface area of a rectangular prism.

Homework:

worksheet

Volume/Surface Area Project