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Perimeter, Circumference, and Area Guided Notes

VOCABULARY

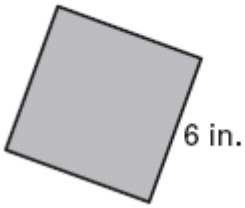
The amount of surface covered by a figure is its **area**.

Area of a Square: Area = $(\text{side})^2$

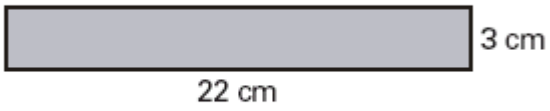
Area of a Rectangle: Area = (base)(height)

Find the Area of a Square and the Area of a Rectangle

a. Find the area of the square.



b. Find the area of the rectangle.



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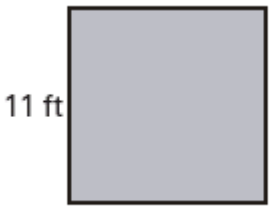
Perimeter, Circumference, and Area Guided Notes

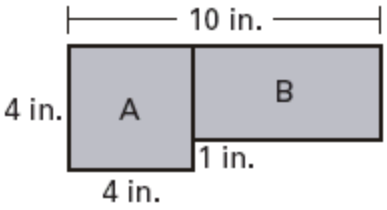
Find the Base of a Rectangle



The rectangle has an area of 132 square feet. Find its base.

Find the Area of a Complex Polygon

Find the area of the polygon made up of rectangles.



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Perimeter, Circumference, and Area Guided Notes

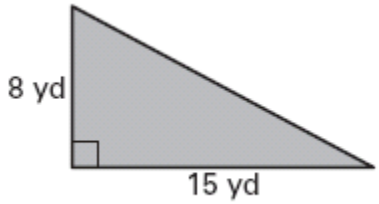
VOCABULARY

The **height of a triangle** is the perpendicular segment from a vertex to the line containing the opposite side, called the **base of the triangle**.

Area of a Triangle: $\text{Area} = \frac{1}{2}(\text{base})(\text{height})$

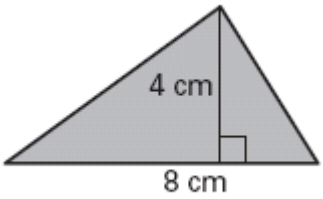
Find the Area of a Right Triangle

Find the area of the right triangle.



Find the Area of a Triangle

Find the area of the triangle.



Find the Base of a Triangle

Find the base of the triangle, given that its area is 42 square feet.

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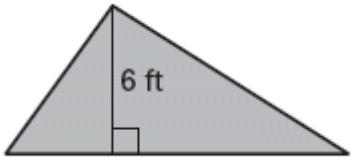
Perimeter, Circumference, and Area Guided Notes



VOCABULARY

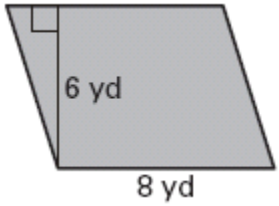
Either pair of parallel sides of a parallelogram are called the **bases of the parallelogram**. The shortest distance between the bases of a parallelogram is called the **height of a parallelogram**.

Area of a Parallelogram: Area = (base)(height)

Area of a Rhombus: Area = $\frac{1}{2}$(product of diagonals)

Find the Area of a Parallelogram

Find the area of the parallelogram.



Find the Base of a Parallelogram

Find the base of the parallelogram given that its area is 105 square inches.

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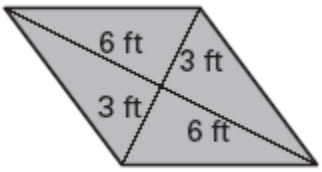
Perimeter, Circumference, and Area Guided Notes

Find the Area of a Rhombus



Find the area of the rhombus.

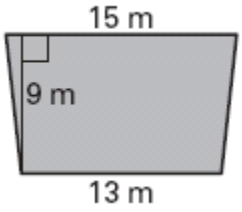
VOCABULARY

The shortest distance between the bases of a trapezoid is the **height of the trapezoid.**

Area of a Trapezoid: $\text{Area} = \frac{1}{2}(\text{height})(\text{sum of bases})$

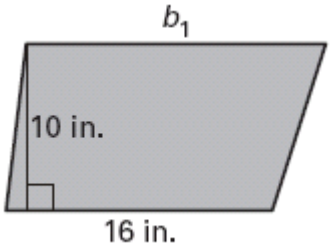
Find the Area of a Trapezoid

Find the area of the trapezoid.



Use the Area of a Trapezoid

Given that the area of the trapezoid is 170 square inches, find b_1.



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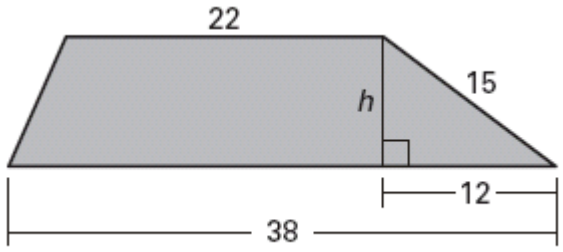
Perimeter, Circumference, and Area Guided Notes

Use the Pythagorean Theorem

Find the height using the Pythagorean Theorem. Then find the area of the trapezoid.



VOCABULARY

A **circle** is the set of all points in a plane that are the same distance from a given point, called the **center** of the circle. The distance from the center to a point on the circle is the **radius**.

The distance across the circle, through the center, is the **diameter**.

The **circumference** of a circle is the distance around the circle.

An angle whose vertex is the center of a circle is a **central angle** of the circle.

A region of a circle determined by two radii and a part of the circle is called a **sector** of the circle.

Circumference of a Circle: $\text{Circumference} = \pi(\text{diameter}) = 2\pi(\text{radius})$

Area of a Circle: $\text{Area} = \pi(\text{radius})^2$

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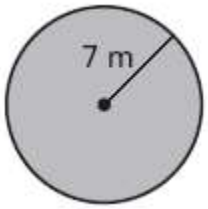
Perimeter, Circumference, and Area Guided Notes

Find the Circumference of a Circle

Find the circumference of the circle.

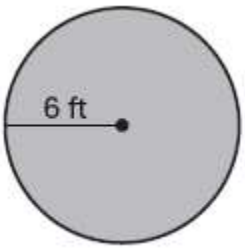
$C = 2\pi r$



Find the Area of the Circle

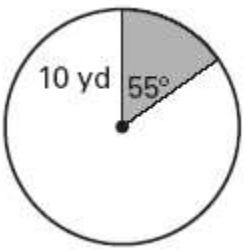
Find the area of a circle with a radius of 6 feet.

$A = \pi r^2$



Find the Area of a Sector

Find the area of the shaded sector.



First find the area of the circle.

Now find the area of the sector. Let x equal the area of the sector.

$$\frac{\textit{Area of sector}}{\textit{Area of entire circle}} = \frac{\textit{Measure of central angle}}{\textit{Measure of entire circle}}$$

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Perimeter, Circumference, and Area Guided Notes

Cross product property