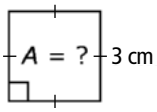
Name: _____ Date: _____

Get Ready

Squares and Square Roots

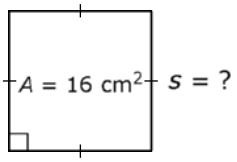
Think of the *square* of a number as the area of a square.



The tick marks mean the sides are equal.

$A = s^2$
$= 3^2$ ← 3×3
$= 9 \text{ cm}^2$

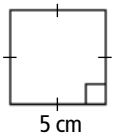
Think of the *square root* of a number as the side length of a square.



$s = \sqrt{16}$ ← $s \times s = 16$. What number, multiplied by itself, equals 16?
$= 4$

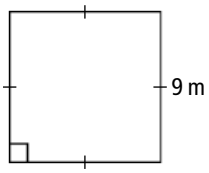
1. Calculate the area of each square.

a)



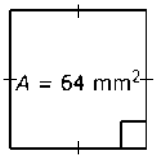
$A = s^2$
$= \_\_\_\_\_^2$
$= \_\_\_\_\_ \text{ cm}^2$

b)



2. What is the side length of each square?

a)



$s = \sqrt{\square}$
$= \_\_\_\_\_ \text{ mm}$

b) a square with an area of 36 cm^2

Substituting Into Formulas

A *formula* is a mathematical rule.
Use formulas to find the circumference and area of a circle with a radius of 10 cm.
Use 3.14 as an approximate (≈) value for π.

$C = 2 \times \pi \times r$ ← Formula →
$\approx 2 \times 3.14 \times \mathbf{10}$ ← Substitute →
$\approx 62.8 \text{ cm}$ ← Solve →

$A = \pi \times r^2$
$\approx 3.14 \times \mathbf{10}^2$
$\approx 3.14 \times 10 \times 10$
$\approx 314 \text{ cm}^2$

Use square units for area.

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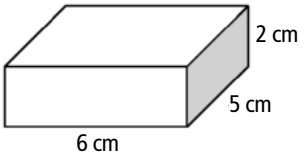
3. A rectangle has a width (w) of 4 m and a length (l) of 7 m. Find the perimeter (P).
Use the formula $P = 2l + 2w$.

Volume and Surface Area

To find the volume of a right prism, use the formula $V = Ah$.
A = area of base h = height of the prism

The shape of the base is a rectangle.



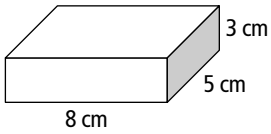
$A = l \times w$
$= \mathbf{5} \times \mathbf{6}$
$= 30 \text{ cm}^2$

$h = 2$
$V = Ah$
$= \mathbf{30} \times \mathbf{2}$
$= 60 \text{ cm}^3$
The volume of the prism is 60 cm^3.

Use cubed units for volume.

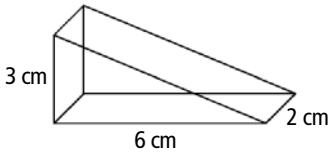
4. Find the volume of each prism.

a)



A prism has 2 identical bases which show the shape of the prism.

b)



_____ ← Shape of the base → _____

$A =$ _____ ← Base formula → $A = b \times h \div 2$

$=$ _____ ← Substitute →

$=$ _____ ← Solve →

$h =$ _____

$V =$ _____ ← Formula →

$=$ _____ ← Substitute →

$=$ _____ ← Solve →