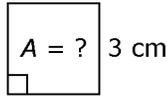


Squares and Square Roots

You can think of the *square* of a number as the area of a square.

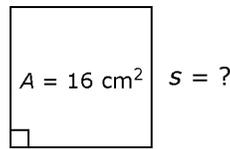
$$\begin{aligned} \text{Area is } 3^2 &= 3 \times 3 \\ &= 9 \end{aligned}$$



The area is 9 cm^2 .

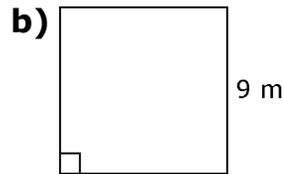
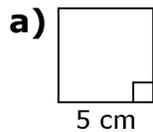
You can think of the *square root* of a number as the side length of a square.

$$\begin{aligned} s &= \sqrt{16} \\ &= 4 \end{aligned}$$

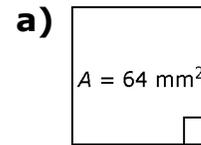


The side length is 4 cm.

1. What is the area of each square?



2. What is the side length of each square?



c) sides of length 3 km

b) area of 36 cm^2
c) area of 400 m^2

Substituting Into Formulas

A formula is a mathematical statement that shows the relationship between specific quantities. An example is $C = 2\pi r$, where C is the circumference and r is the radius of a circle.

What is the circumference and area of a circle with a radius of 10 cm? Use 3.14 as an approximate value for π .

$$\begin{aligned} C &= 2\pi r \\ &= 2\pi(10) \\ &\approx 20(3.14) \\ &\approx 62.8 \end{aligned}$$

$$\begin{aligned} A &= \pi r^2 \\ &= \pi(10)^2 \\ &\approx 3.14(100) \\ &\approx 314 \end{aligned}$$

The circumference is approximately 62.6 cm. The area is approximately 314 cm^2 .

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BLM 3-2
(continued)

3. What is the perimeter, P , of a rectangle with a width, w , of 4 m and a length, l , of 7 m? Use the formula $P = 2w + 2l$.

4. When a certain chemical is added to water, the water gets hotter. A formula for the temperature, t , in degrees Celsius, of the water is $t = 24 + 8m$, where m is the amount of chemical added, in kg. Copy and complete the following table of values for the missing values of m and t .

m (kg)	0	5			9
t ($^{\circ}\text{C}$)			48	72	

Volume and Surface Area

You can determine the volume, V , of a right prism using the formula $V = Ah$, where A is the area of the base and h is the height of the prism.

What is the volume of the rectangular prism?

$$A = (5)(6)$$

$$= 30$$

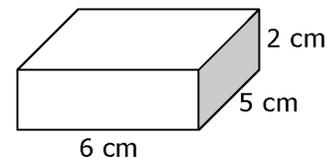
$$h = 2$$

$$V = Ah$$

$$= 30(2)$$

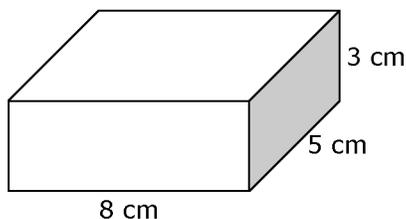
$$= 60$$

The volume of the prism is 60 cm^3 .

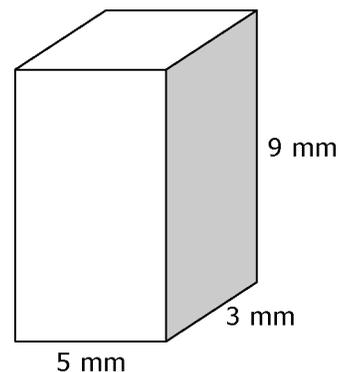


5. Determine the volume of each rectangular prism.

a)

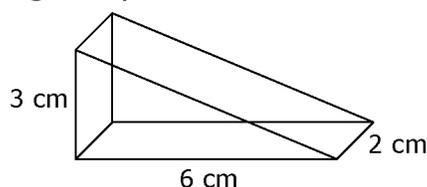


b)



6. What is the volume of each right triangular prism?

a)



b)

