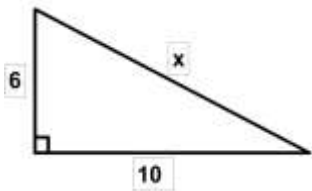
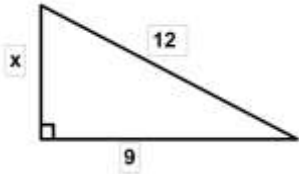


Formulas using Exponents

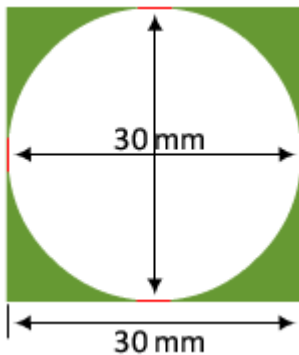
1. Determine the surface areas of the following cubes with the side lengths given.

- a. 15 cm
- b. 8.5 mm
- c. 0.75 m

2. Using the Pythagorean Theorem, find x to two decimal places.



3. Develop a formula that would allow you to determine the area of the shaded region of the following figure. Then use the formula to determine the area of the shaded region.



4. If a certain colony of bees triples in numbers every day, write a formula you could use to determine the number of bees in the colony after n days. If there are 200 bees in the colony now, how many would there be in 10 days, in 14 days?

Answers

a. 1350 cm^2

b. 433.5 mm^2

c. 3.375 m^2

2a. 7.94 units

2b. 11.66 units

3a. Area of shaded region = area of square minus area of circle

$$\text{Area of shaded region} = 30^2 - \pi(15)^2$$

3b. Shaded region 193.14 mm^2

4a. Number of bees: $200(3)^n$

4b. Number of bees: $200(3)^{10} \rightarrow 11\,809\,800$

4c. Number of bees: $200(3)^{14} \rightarrow 956\,593\,800$