

Prerequisite Skills

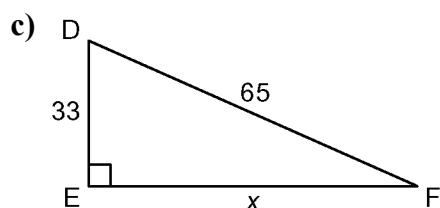
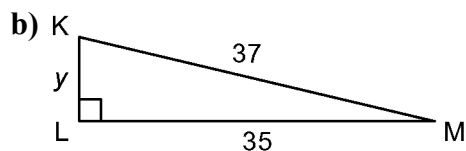
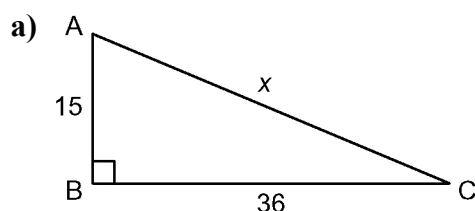
Solve Equations

1. Solve.

- a) $2x + 5 = 11$ b) $\frac{x}{5} + 6 = 7$
 c) $x^2 = 225$ d) $x^2 = 24^2 + 32^2$
 e) $60^2 + x^2 = 61^2$ f) $13^2 - 12^2 = x^2$

The Pythagorean Theorem

2. Find the measure of the unknown side.



3. A post is to be temporarily braced until the cement that holds the post perpendicular to the ground can dry. The 10-ft support is to be attached 6 ft off the ground.

- a) Draw a diagram to model the problem.
 b) How far from the base of the post will the support be attached to the ground?

Ratios

4. Express each ratio in lowest terms.

- a) 5:15 b) 10:35
 c) 12:30 d) 52:14

5. A mixture of oil to gas in a small engine is in the ratio of 1:7. Write each component as a ratio to the total mix.

6. A 450-g mixture of peanuts and cashews contains 150 g of cashews. Write the ratio of the mass of peanuts to the mass of cashews in lowest terms.

Proportions

7. Solve for each unknown.

- a) $\frac{x}{5} = \frac{6}{15}$ b) $\frac{27}{30} = \frac{9}{x}$
 c) $11:3 = x:15$ d) $7:2 = 42:y$
 e) $12:b = 108:36$ f) $\frac{x}{6} = \frac{27}{18} = \frac{y}{54}$

8. The ratio of chocolate chips to walnuts in a cookie recipe is 8:3. If the recipe calls for 24 g of chocolate chips, how many grams of walnuts would be needed?

Rounding

9. Evaluate to one decimal place.

- a) $\sqrt{56}$ b) $\sqrt{200}$
 c) $\sqrt{12}$ d) $\sqrt{417}$

Angle Sum of a Triangle

10. Determine the measures of the missing angles.

