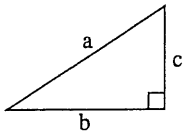
RIGHT TRIANGLES: ANSWERS

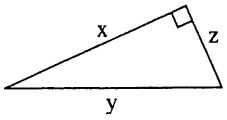
1. Write the Pythagorean relation for each right triangle.

a)



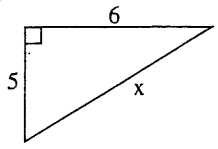
$b^2 + c^2 = a^2$

b)



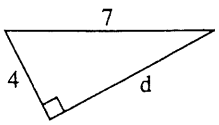
$x^2 + z^2 = y^2$

c)



$5^2 + 6^2 = x^2$

d)



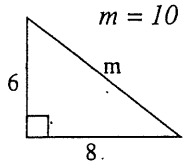
$4^2 + d^2 = 7^2$

2. Will the following lengths form a right triangle?

a) 1, 2, 3 — *No.*
b) 8, 3, 5 — *No.*
c) 6, 8, 10 — *Yes.* $6^2 + 8^2 = 10^2$
d) 12, 13, 5 — *Yes.* $5^2 + 12^2 = 13^2$
e) 7, 9, 12 — *No.*
f) 17, 15, 8 — *Yes.* $8^2 + 15^2 = 17^2$

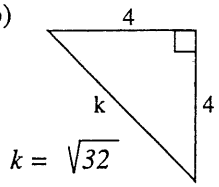
3. Find the length of the unknown side. Leave your answer as a whole number or a radical.

a)



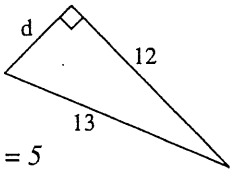
$m = 10$

b)



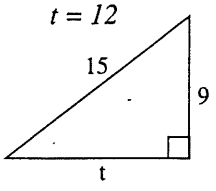
$k = \sqrt{32}$

c)



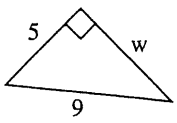
$d = 5$

d)



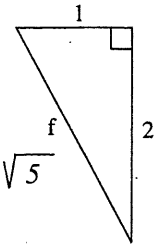
$t = 12$

e)



$w = \sqrt{56}$

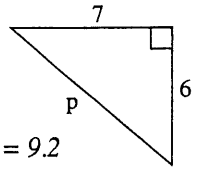
f)



$f = \sqrt{5}$

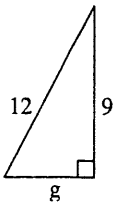
4. Find the length of the unknown side to one decimal place.

a)



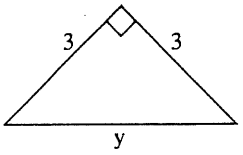
$p = 9.2$

b)



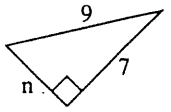
$g = 7.9$

c)



$y = 4.2$

d)



$n = 5.7$

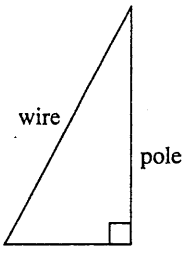
5. Find the length of the diagonal of a rectangle that has length 8 cm and width 5 cm. $\sqrt{89}$ *cm, 9.4 cm*

6. An empty lot that Ann uses as a shortcut is a square with sides 30 m long. How much shorter is her walk diagonally across the lot compared to her walk along two sides? *17.6 m*

7. A ladder that is 8 m long is against a wall. The base of the ladder is 2.1 m from the wall. How high on the wall does the ladder reach? *7.7 m*

8. Ray hikes 7 km north and then 4 km east. How far is he from his starting point? *8.1 km*

9. A 15 m flag pole is supported by a 20 m guy wire as shown. How far from the pole is the wire attached to the ground? *13.2 m*



10. A square with sides 8.5 cm long is drawn inside a circle. Find the diameter of the circle. *12.0 cm*