Name_____ Date_____

7.3 – The Pythagorean Theorem

Find the square root(s).

1) $\pm\sqrt{121}$

2) $-\sqrt{0.49}$

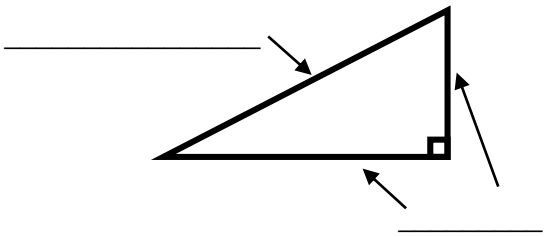
3) $\sqrt{\frac{16}{25}}$

4) $\sqrt{441}$

5) $\pm\sqrt{225}$

6) $\pm\sqrt{256}$

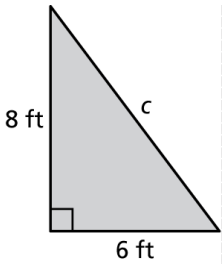
7) Label the parts:



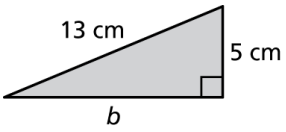
8) If it is a right triangle, then the formula of the Pythagorean theorem, _____, works.

Find the missing length of the triangle. Show all algebraic work.

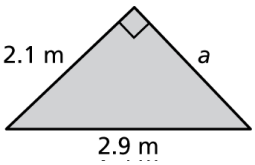
8)



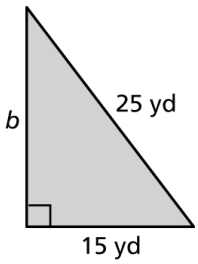
9)



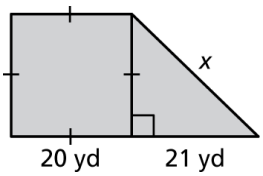
10)



11)



12) Find the missing length of the figure.

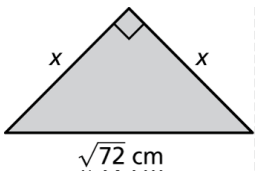


13) Can a right triangle have a leg that is 10 meters long and a hypotenuse that is 10 meters long? Show work and explain.

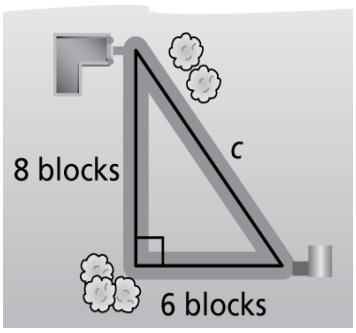
14) You built braces in the shape of a right triangle to hold your surfboard. The leg (brace) attached to the wall is 10 inches and your surfboard sits on a leg that is 24 inches. What is the length of the hypotenuse that completes the right triangle?

15) Laptops are advertised by the lengths of the diagonals of the screen. You purchase a 17-inch laptop and the width of the screen is 15 inches. What is the height of its screen?

16) In a right isosceles triangle, the lengths of both legs are equal. For the given isosceles triangle, what is the value of x?



17) To get from your house to your school, you ride your bicycle 6 blocks west and 8 blocks north. A new road is being built that will go directly from your house to your school, creating a right triangle. When you take the new road to school, how many fewer blocks will you be riding to school and back?



18) Find the missing length of the right triangle if its dimensions are: $a=3,\ b=\sqrt{27},\ c=?$

19) Peter and Paul are standing together talking. When they leave, Peter walks 5 kilometers east to his house and Paul walk 12 kilometers north to his house. How many kilometers do they live from each other if you take the direct rout? *(Hint: It may help to draw a picture).*

20) Name a way that someone could use the Pythagorean Theorem to solve a "real life" problem.