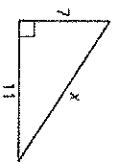


The Pythagorean Theorem HOMEWORK

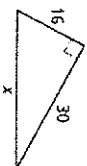
1. What is a Pythagorean Triple?

For #2 - 5, find the value of x . Then decide whether the side lengths form a Pythagorean triple.

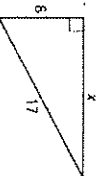
2. $x =$ _____
Pythagorean Triple? Yes/No



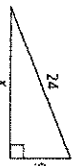
3. $x =$ _____
Pythagorean Triple? Yes/No



4. $x =$ _____
Pythagorean Triple? Yes/No



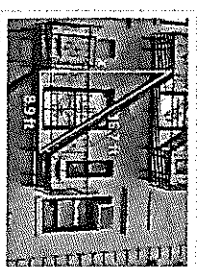
5. $x =$ _____
Pythagorean Triple? Yes/No



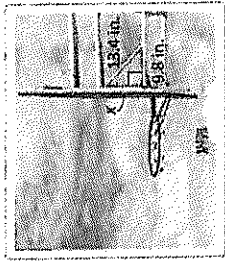
6. Describe and correct the error in using the Pythagorean Theorem

~~$c^2 = a^2 + b^2$~~
 ~~$x^2 = 10^2 + 26^2$~~
 ~~$x^2 = 100 + 676$~~
 ~~$x = \sqrt{776}$~~
 ~~$x \approx 27.9$~~

7. The fire escape forms a right triangle, as shown. Use the Pythagorean Theorem to approximate the distance between the two platforms.
 $x =$ _____

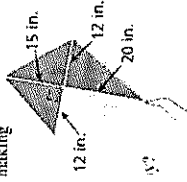


8. The backboard of the basketball hoop forms a right triangle with the supporting rods, as shown. Use the Pythagorean Theorem to approximate the distance between the rods where they meet the backboard.



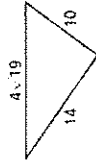
x = _____

9. You are making a kite and need to figure out how much binding to buy. You need the binding for the perimeter of the kite. The binding comes in packages of two yards. How many packages should you buy?

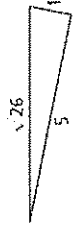


For #10 – 13, decide whether the triangle is a right triangle. Show all work.

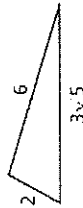
10. Right Triangle? Yes/No



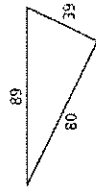
11. Right Triangle? Yes/No



12. Right Triangle? Yes/No



13. Right Triangle? Yes/No



For #14 – 17, verify that the segment lengths form a triangle. Then decide whether the triangle is acute, right, or obtuse. Show all work.

14. 10, 11, and 14
Triangle? Yes/No
Acute/Right/Obtuse

15. 15, 20, and 36
Triangle? Yes/No
Acute/Right/Obtuse

16. 24, 30, and $6\sqrt{43}$
Triangle? Yes/No
Acute/Right/Obtuse

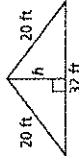
17. 10, 15, and $5\sqrt{13}$
Triangle? Yes/No
Acute/Right/Obtuse

18. In baseball, the lengths of the paths between consecutive bases are 90 feet, and the paths form right angles. The player on first base tries to steal second base. How far does the ball need to travel from home plate to second base to get the player out? Draw and label the picture.

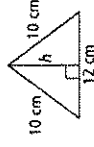
Distance = _____

For #19 – 20, find the area of the isosceles triangle. Show all work, including formulas.

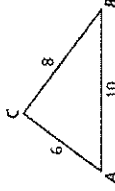
19. Area = _____



20. Area = _____



21. How do you know $\angle C$ is a right angle without using the Pythagorean Theorem?



22. Your friend claims 72 and 75 cannot be part of a Pythagorean triple because $72^2 + 75^2$ does not equal a positive integer squared. Is your friend correct? Explain your reasoning.