

# Pythagorean Theorem Test

Name: KEY  
Block: \_\_\_\_\_ Date: \_\_\_\_\_

1) What is the Pythagorean Theorem? (Hint: It is not  $a^2 + b^2 = c^2$ )

The Pythagorean Theorem is the sum of the squares of the two legs is equal to the square of the hypotenuse.

Find the length of the missing side. Round your answer to the nearest tenth.

2)  $a = 6$   $b = 8$   $c =$  \_\_\_\_\_

$$\begin{aligned} 6^2 + 8^2 &= c^2 \\ 36 + 64 &= c^2 \\ \sqrt{100} &= \sqrt{c^2} \\ 10 &= c \end{aligned}$$

3)  $a = 8$   $b =$  \_\_\_\_\_  $c = 17$

$$\begin{aligned} 8^2 + b^2 &= 17^2 \\ 64 + b^2 &= 289 \\ \sqrt{b^2} &= \sqrt{225} \\ b &= 15 \end{aligned}$$

4)  $a =$  \_\_\_\_\_  $b = 18$   $c = 25$

$$\begin{aligned} a^2 + 18^2 &= 25^2 \\ a^2 + 324 &= 625 \\ \sqrt{a^2} &= \sqrt{301} \\ a &\approx 17.3 \end{aligned}$$

Determine whether the given lengths can be sides of a right triangle.

5) 9, 12, 15

$$\begin{aligned} 9^2 + 12^2 &= 15^2 \\ 81 + 144 &= 225 \\ \checkmark \end{aligned}$$

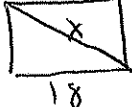
6) 16, 30, 34

$$\begin{aligned} 16^2 + 30^2 &= 34^2 \\ 256 + 900 &= 1156 \\ \checkmark \end{aligned}$$

7) 2, 4, 5

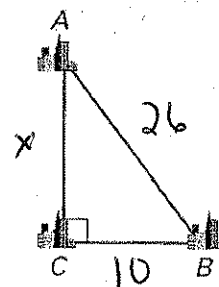
$$\begin{aligned} 2^2 + 4^2 &= 5^2 \\ 4 + 16 &= 25 \\ 20 &\neq 25 \end{aligned}$$

8) A volleyball court is a rectangle 9 meters by 18 meters. What is the length of the diagonal of the court?

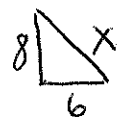
9   $\begin{aligned} 9^2 + 18^2 &= x^2 \\ 81 + 324 &= x^2 \\ x &\approx 20.1 \text{ meters} \end{aligned}$

9) The distance between City A and City B is 26 miles and the distance between city B and city C is 10 miles. What is the distance between City A and City C?

$$\begin{aligned} x^2 + 10^2 &= 26^2 \\ x^2 + 100 &= 676 \\ \sqrt{x^2} &= \sqrt{576} \\ x &= 24 \text{ miles} \end{aligned}$$



10) The foot of a ladder is placed 6 feet from a wall. If the top of the ladder rests 8 feet up on the wall, how long is the ladder?



$$\begin{aligned} 6^2 + 8^2 &= x^2 \\ 36 + 64 &= x^2 \\ \sqrt{100} &= \sqrt{x^2} \\ x &= 10 \text{ feet} \end{aligned}$$

11) John leaves school to go home. He walks 15 blocks North and then 20 blocks west. How far is John from the school?

$$\begin{aligned} 15^2 + 20^2 &= x^2 \\ 225 + 400 &= x^2 \\ \sqrt{625} &= \sqrt{x^2} \\ 25 &= x \end{aligned}$$

25 blocks

