

3 Chapter Review

Key Words

For #1 to #5, fill in the blanks. Use the word list.

hypotenuse perfect square prime factorization Pythagorean relationship square root

- The _____ of 36 is 6.
- The number 25 is a _____ because it is the product of the same two factors, $5 \times 5 = 25$.
- In a right triangle, the longest side is called the _____.
- The sides of a right triangle are a , b , and c . The longest side is c . The equation $c^2 = a^2 + b^2$ is known as the _____.
- The _____ of 18 is $2 \times 3 \times 3$.

3.1 Squares and Square Roots, pages 108–116

- Find the square of each number.

a) 6^2

b) 11^2

- Find each square root.

a) $\sqrt{100}$

b) $\sqrt{144}$

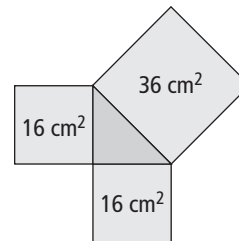
- Lisa needs at least 17 m^2 of fabric to make curtains. Is this square piece of fabric large enough? Show how you can prove your answer.



3.2 Exploring the Pythagorean Relationship, pages 118–124

9. A triangle has squares on each of its sides.

a) What is the length of each of the 3 sides of the triangle?



b) How could you show if this triangle is a right triangle?

10. A triangle has side lengths $x = 9$ cm, $y = 12$ cm, and $z = 15$ cm. Is it a right triangle?

$x =$ _____	$y =$ _____	$z =$ _____
$x^2 =$ ²	$y^2 =$ ²	$z^2 =$ ²
= _____	= _____	= _____

The sum of the area of the 2 small squares = _____ + _____

= _____

Does this sum equal the area of the large square? Circle YES or NO.

It _____ a right triangle.
(is or is not)

3.3 Estimating Square Roots, pages 126–131

11. What is an estimate for $\sqrt{10}$? Round your answer to 1 decimal place.

Perfect squares on either side of 10:

$3^2 =$ _____ ² = _____

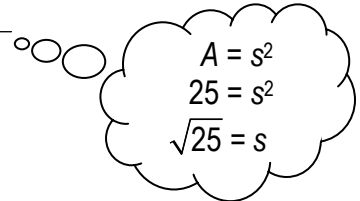
$\sqrt{10}$ is between _____ and _____
←
→

The closer square root is _____. An estimate is _____.

12. Cliffmount School is creating square invitations for its 50th anniversary party. There are 3 possible designs.



- a) Estimate a whole number area for the middle invitation: _____ 25 cm^2 _____ cm^2 36 cm^2
- b) What is the side length of the smallest invitation? _____
- c) What is the side length of the largest invitation? _____
- d) Estimate the side length of the middle invitation.



3.4 Using the Pythagorean Relationship, pages 133–138

13. Round each answer to the nearest tenth of a centimetre where appropriate.

- a) What is the length of the hypotenuse in $\triangle ABC$?

$AB =$ _____ units $BC =$ _____ units

$AC^2 = AB^2 + BC^2$

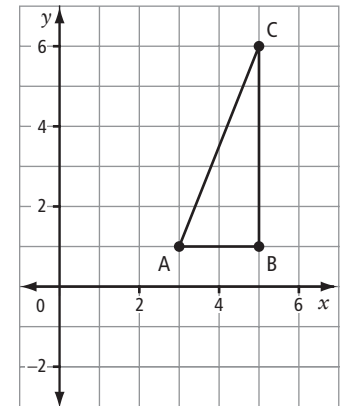
$AC^2 =$ ² $+$ ²

$AC^2 =$ _____ $+$ _____

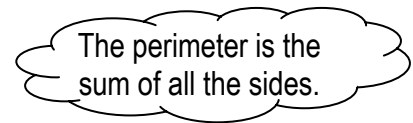
$AC^2 =$ _____

$AC = \sqrt{\text{span style="border: 1px solid black; padding: 2px 10px;"> }}$

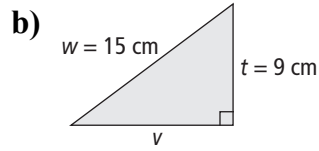
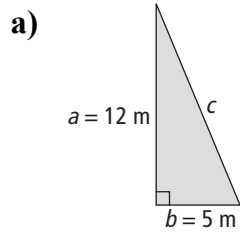
$AC =$ _____



- b) What is the perimeter of $\triangle ABC$?



14. Find the missing side length of each triangle.



$$c^2 = a^2 + b^2 \quad \leftarrow \text{Formula} \rightarrow$$

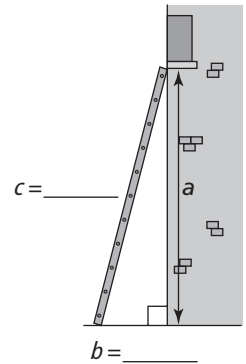
$$\leftarrow \text{Substitute} \rightarrow$$

$$\leftarrow \text{Solve} \rightarrow$$

3.5 Applying the Pythagorean Relationship, pages 140–146

15. A 4-m ladder is being used in *Romeo and Juliet*.
The bottom of the ladder will be placed 1 m from the base of Juliet’s house.

a) How far up the wall will the ladder reach? Show your work.



Sentence: _____

b) The height from the base of the building to Juliet’s window is 3.9 m.
Will the ladder reach the window?
