Corner Brook Intermediate Math 8

Unit 1: Square Roots and the Pythagorean Theorem Name: ______________________

1.6 Exploring the Pythagorean Theorem – Notes

Determine whether each triangle with the given side lengths is a right triangle.

a) 6cm, 6cm, $\overset{c}{9cm}$

$a^2 + b^2 \stackrel{?}{=} c^2$

$6^2 + 6^2 \stackrel{?}{=} 9^2$

$36 + 36 \stackrel{?}{=} 81$

$72 \neq 81$

∴ NOT a right triangle.

therefore

b) 7cm, 24cm, $\overset{c}{25c}$

$a^2 + b^2 \stackrel{?}{=} c^2$

$7^2 + 24^2 \stackrel{?}{=} 25^2$

$49 + 576 \stackrel{?}{=} 625$

$625 = 625$ ☺

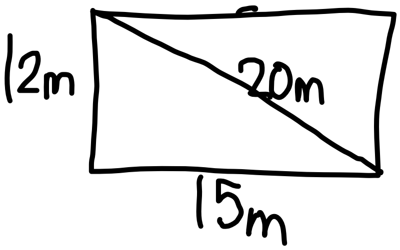
∴ it is a right triangle

A set of 3 whole numbers that satisfies the Pythagorean Theorem is called a

Pythagorean triple

For example, 3-4-5 is a Pythagorean triple because $3^2 + 4^2 = 5^2$.

Gabe is building a rectangular stage for the school play. The side lengths are 12 m and 15 m. Gabe measures the diagonal of the floor as 20 m. Is the angle between the two sides a right angle? Justify your answer.



$$a^2 + b^2 \stackrel{?}{=} c^2$$

$$12^2 + 15^2 \stackrel{?}{=} 20^2$$

$$144 + 225 \stackrel{?}{=} 400$$

$$369 \neq 400$$

∴ The angle between the two sides are NOT a right angle.