

Problem-Based Task: Calibrating Consoles

Coaching Sample Responses

- a. What is the definition of an isosceles triangle?

Isosceles triangles have at least two sides that are congruent and at least two base angles that are congruent.

- b. How can you determine the length of each side of the triangle Scarlett created?

The triangle Scarlett created is made up of two smaller triangles.

The smaller triangles are congruent because of the Side-Angle-Side Congruence Statement.

Use the Pythagorean Theorem to calculate the lengths of the sides of the triangle Scarlett created.

- c. What is the length of each side of the triangle Scarlett created?

$$a^2 + b^2 = c^2 \quad \text{Pythagorean Theorem}$$

$$5^2 + 12^2 = c^2 \quad \text{Substitute 5 and 12 for the lengths of } a \text{ and } b.$$

$$25 + 144 = c^2 \quad \text{Simplify.}$$

$$169 = c^2$$

$$c = \sqrt{169} = 13$$

Remember that the two smaller triangles are congruent.

Two sides of the triangle Scarlett created are each 13 feet long, and the third side is 10 feet long.

- d. Is the triangle Scarlett created an isosceles triangle?

The triangle Scarlett created is an isosceles triangle because two of the sides are equal in length.

- e. How can you determine the measure of the third angle of the triangle Wren created?

The sum of the interior angles of a triangle is 180° .

Subtract the given angles from 180 to determine the unknown angle measure.

- f. What is the measure of the third angle of the triangle Wren created?

$$180 - (68 + 44) = 68$$

The third angle measure of the triangle Wren created is 68° .

- g. Is the triangle Wren created an isosceles triangle?

The triangle Wren created is an isosceles triangle because two of the angles are congruent.

- h. Did either girl calibrate her game console controller correctly? If so, who?

Both girls calibrated their game console controllers correctly because the triangle created by each girl is an isosceles triangle.

Recommended Closure Activity

Select one or more of the essential questions for a class discussion or as a journal entry prompt.