GRADE 8 MATH · CLASSWORK · ADVANCED

Use the Converse of the Pythagorean Theorem to Analyze Shapes

SCORE / 25

01 Part A · Practice

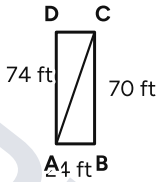
A diagonal splits a quadrilateral into triangles; if a side, side, diagonal triangle satisfies $a^2 + b^2 = c^2$, that corner is a right angle.

EXAMPLE

Parallelogram $ABCD$ has $AB = 12$, $BC = 5$, and diagonal $AC = 13$. Is it a rectangle?

1. Look at $\triangle ABC$: $12^2 + 5^2 = 144 + 25 = 169$.
2. $13^2 = 169$, so $\angle B = 90°$.
3. A parallelogram with a right angle is a rectangle.

1 ●○○ Is $\angle B$ a right angle? Is parallelogram $ABCD$ a rectangle?



2 ●○○ Parallelogram $WACY$ has $WA = 120$, $AC = 35$, and diagonal $WC = 122$. Is it a rectangle?

3 ●○○ The diagonals of a kite meet at point E. $AE = 2.5$, $BE = 6$, and $AB = 6.5$. Do the diagonals meet at a right angle?

4 ●○○ Sides 144 in. and 42 in. meet at a corner of a quadrilateral. What diagonal makes that corner a right angle?

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Preview - the full worksheet and its answer key are at primeworksheet.com