

Watch. Practice. Understand. | Lesson 042

The Secret of Proving Perpendicular Lines with Transversal Theorem and More (Big Idea ...

Watch the matching video: <https://www.youtube.com/watch?v=FN-A8yRvqf0>

Practice focus: Parallel lines and angle relationships

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

- 01** Two parallel lines are cut by a transversal. One acute angle is 65° . Find every possible angle measure at the intersections.

- 02** Alternate interior angles measure $3x + 5$ and $5x - 25$ degrees on parallel lines. Find x .

- 03** Same-side interior angles on parallel lines are $4x$ and $2x + 30$ degrees. Find them.

- 04** A transversal creates equal corresponding angles. What can be concluded, and why?

Worked answers | Lesson 042

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Practice focus: Parallel lines and angle relationships

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- 01** Two parallel lines are cut by a transversal. One acute angle is 65° . Find every possible angle measure at the intersections.

Corresponding/vertical angles preserve 65° ; adjacent supplementary angles are $180^\circ - 65^\circ = 115^\circ$.

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- 02** Alternate interior angles measure $3x + 5$ and $5x - 25$ degrees on parallel lines. Find x .

Set them equal: $3x + 5 = 5x - 25$, so $x = 15$.

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- 03** Same-side interior angles on parallel lines are $4x$ and $2x + 30$ degrees. Find them.

$4x + 2x + 30 = 180$ gives $x = 25$. Angles: 100° and 80° .

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- 04** A transversal creates equal corresponding angles. What can be concluded, and why?

The lines are parallel by the converse of the corresponding angles theorem.