



GRADE 8 · GEOMETRY · HOMEWORK

ANGLES IN TRIANGLES AND PARALLEL LINES

Today's goal: I can use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.



Pick your peppers!

Everyone does Mild & Medium. Then climb as high as you can.



Medium
Digit the Fox



Spicy
Blaze the Dragon



Extra Spicy
Pi the Owl



REMEMBER Alternate equal, corresponding equal, co-interior add to 180. Angle sum 180. Exterior = the two opposite interior angles. Two equal angles $\Rightarrow$ similar.



FAMILY CORNER

No need to remember this math yourself! Ask your student to teach you Mr DJ's example, then try the first Mild problem together.



MEDIUM

Digit the Fox: Stretch your brain.

- 1 A transversal makes 72° with two parallel lines. Give the alternate and co-interior angles.

Answer

- 2 A triangle has angles 25° and 95° . Find the third angle and the exterior angle at the 95° vertex.

Answer

- 3 An exterior angle of a triangle is 120° . One opposite interior angle is 45° . Find the other two interior angles.

Answer



OOPS ALERT

Careful on #1! The slip Mr DJ sees most: Gave 72° for both.



SPICY

Blaze the Dragon: Bring the heat!

- 4 Explain why co-interior angles are not equal, using angles on a straight line.

Answer

- 5 A triangle has angles 40° , 60° and 80° . A second has 40° and 60° . Are they similar? Explain.

Answer

6 Can a triangle have two angles of 95° ? Explain.

Answer

7 Two angles of a triangle are equal and the third is 90° . Find all three, and say whether that fixes the triangle's size.

Answer



EXTRA SPICY

Pi the Owl: Big-brain challenge.

8 Why does the standard ask you to ESTABLISH these facts by argument rather than learn them?

Answer



How did this sheet feel? ☐ Easy for me ☐ Just right ☐ Made me think

Stuck? Watch Mr DJ explain it

"Angles and Parallel Lines Explained Step by Step" on
YouTube: [youtube.com/@MathWithMrDJ](https://www.youtube.com/@MathWithMrDJ)

Brain break: daily puzzles

Three new math puzzles every day, free:
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