



GRADE 7 · GEOMETRY · HOMEWORK

DRAWING SHAPES WITH GIVEN CONDITIONS

Today's goal: I can draw geometric shapes with given conditions (side lengths, angle measures, radius/diameter) and know and understand conditions that determine a unique triangle, more than one triangle, or no triangle.



Pick your peppers!

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



Mild

Tan the Turtle



Medium

Digit the Fox



Spicy

Blaze the Dragon

WATCH MR DJ SOLVE

Can a triangle have sides 3, 3 and 7?

1 $3 + 3 = 6$, and $6 < 7$.

Answer: **No**



REMEMBER Three sides make a triangle only when the two shorter add to MORE than the longest. Equal gives a flat line. Three angles must sum to 180° and then give infinitely many triangles.



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.



MILD

Tan the Turtle: Slow and steady. Warm up!

1 Can a triangle have sides 5, 12 and 13?

Answer



OOPS ALERT

Careful on #1! The slip Mr DJ sees most: Compared $5 + 13$ with 12.



MEDIUM

Digit the Fox: Stretch your brain.

2 Can a triangle have sides 8, 8 and 15?

Answer

3 Can a triangle have sides 8, 8 and 16?

Answer

4 Can a triangle have angles 100° , 40° and 40° ? How many?

Answer

5 A triangle has angles 35° and 85° . Find the third.

Answer



SPICY

Blaze the Dragon: Bring the heat!

- 6 Questions 2 and 3 differ by one unit. Explain why one works and the other does not.

Answer

- 7 Two students are given three angles that sum to 180° and asked to draw the triangle. They produce triangles of different sizes. Has either made a mistake? Explain.

Answer



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

Stuck? Watch Mr DJ explain it

Step-by-step video lessons on YouTube: [youtube.com/@MathWithMrDJ](https://www.youtube.com/@MathWithMrDJ)

Brain break: daily puzzles

Three new math puzzles every day, free: puzzles.mathwithmrdj.com