

GRADE 7 • GEOMETRY • PRACTICE

ANGLE RELATIONSHIPS

Today's goal: I can find an unknown angle, including by writing and solving equations and write equations for multi-step problems to find an unknown angle.



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



Extra Spicy

Pi the Owl

WATCH MR DJ SOLVE

Find the supplement of 20° .

1 $180 - 20 = 160^\circ$.

Answer: 160°



REMEMBER Complementary $\rightarrow$ sum 90° . Supplementary $\rightarrow$ sum 180° . Vertical $\rightarrow$ equal. Angles on a straight line $\rightarrow$ sum 180° . Write the equation from the RELATIONSHIP, never from how the diagram looks.

 MILD

Tan the Turtle: Slow and steady. Warm up!

1 Find the complement of 20° .

Answer



OOPS ALERT

Careful on #1! The slip Mr DJ sees most: Answered 160° .

**MEDIUM****Digit the Fox:** Stretch your brain.

- 2 Three equal angles sit on a straight line... actually they meet at a point on one side of a line, and $3x = 90$. Find x .

Answer

- 3 Three angles on a straight line are x , x , and $(x + 30)$. Write an equation and find x .

Answer

- 4 Check your answer to question 3 by finding all three angles and adding them.

Answer

**SPICY****Blaze the Dragon:** Bring the heat!

- 5 Find the complement of 45° . What is special about this angle?

Answer

- 6 Find the supplement of 90° . What does this tell you about a right angle?

Answer

- 7 Two complementary angles are x and $2x$. Write an equation and find both angles.

Answer



EXTRA SPICY

Pi the Owl: Big-brain challenge.

- 8 A student sees two angles side by side that look equal and concludes they are 90° each. Explain what is wrong with the reasoning, even if the answer happens to be right.

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: puzzles.mathwithmrdj.com