Angle Equation Check

Match each equation to the angle total you see.

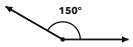
MA.4.GR.1.3 "Solve real-world and mathematical problems involving unknown whole-number angle measures. Write an equation to represent the unknown."

NAME _____ DATE _____

EQUATION MATCHES

The equation uses the measure shown as the total angle. It can find the missing part, x.

A 150° total has the equation x + 44 = 150.



EQUATION MISMATCHES

The equation does not use the measure shown as the total angle. It cannot correctly find the missing part of that angle.

A 75° total has the equation x + 20 = 90.



1 SORT

8 items

Circle MATCHES or MISMATCHES for each figure, then choose two items and explain how the shown total helped you decide.

1.

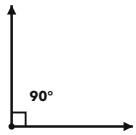


Figure 1: x + 26 = 90

MATCHES MISMATCHES

2.

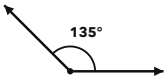


Figure 2: x + 38 = 180

MATCHES MISMATCHES

3.

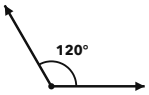


Figure 3: x + 47 = 120

MATCHES MISMATCHES

4.



Figure 4: x + 69 = 180

MATCHES MISMATCHES

5.

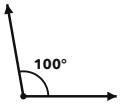


Figure 5: x + 25 = 90

MATCHES MISMATCHES

6.

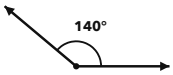


Figure 6: x + 62 = 180

MATCHES MISMATCHES

7.

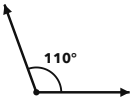


Figure 7: x + 36 = 110

MATCHES MISMATCHES

8.



Figure 8: x + 73 = 160

MATCHES MISMATCHES

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Draw one new angle and equation for MATCHES and one for MISMATCHES, then solve x for each equation.

MATCHES

MISMATCHES

CHALLENGE

Draw a 180° straight angle split into three parts. Label two whole-number parts, write an equation for the third part, and solve for x.

ANSWER KEY # Angle Equation Check

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1: x + 26 = 90 (angle 90°)	**MATCHES**	The equation uses 90 as the total shown in the figure.
2	Figure 2: x + 38 = 180 (angle 135°)	**MISMATCHES**	The figure shows a total of 135, not 180.
3	Figure 3: x + 47 = 120 (angle 120°)	**MATCHES**	The equation uses 120 as the total shown in the figure.
4	Figure 4: x + 69 = 180 (angle 180°)	**MATCHES**	The equation uses 180 as the total shown in the figure.
5	Figure 5: x + 25 = 90 (angle 100°)	**MISMATCHES**	The figure shows a total of 100, not 90.
6	Figure 6: x + 62 = 180 (angle 140°)	**MISMATCHES**	The figure shows a total of 140, not 180.
7	Figure 7: x + 36 = 110 (angle 110°)	**MATCHES**	The equation uses 110 as the total shown in the figure.
8	Figure 8: x + 73 = 160 (angle 160°)	**MATCHES**	The equation uses 160 as the total shown in the figure.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **MATCHES**: A 130° total has one part of 58°. x + 58 = 130, so x = 72°.
- **MISMATCHES**: A 105° total has one part of 31°. x + 31 = 90 gives x = 59°, but 90 is not the shown total.

Challenge: One straight angle has parts 48°, 77°, and x°. x + 48 + 77 = 180, so x = 55°.

For Part 2, accept explanations that compare the total on the figure with the total in the equation. A MISMATCHES equation may be solved, but its answer does not represent the missing part of the shown angle.