

Robot Adventures: Angles and Rotations in Robot City

Math

Grade 4

Robots Theme

□ Help Rodney and his robot friends navigate Robot City by solving angle challenges and rotations!

NAME _____

DATE _____

SCORE _____ / 8

1

Rodney Copperbottom is standing in the middle of Robot City Square. He turns to face the Bigweld Industries building, then rotates 45 degrees clockwise to look at the Parts Department. What is the total angle he has turned?

2

Fender, the reckless robot, is dancing at a celebration. He spins around once in a full circle while celebrating Rodney's success. A full rotation equals how many degrees?

3

Cappy, the intelligent secretary robot, is organizing robot positions in the factory. She places Rodney at one angle and Fender at another angle that is 30 degrees more than Rodney's position. If Rodney is at 50 degrees, at what angle is Fender standing?

4

Bigweld's factory has two assembly line paths that meet. The angle between the first assembly line and the second assembly line is 90 degrees. This is called what type of angle?

5

Piper, the ambitious young robot, is learning to measure angles with her protractor. She measures the angle between two conveyor belt directions in the factory. The angle measures 125 degrees. Is this angle acute, right, or obtuse?

6

Ratchet, the helpful robot, is fixing machinery in Bigweld Industries. He needs to position a robotic arm at 180 degrees from its starting position. This means the arm will be pointing in the complete opposite direction. What type of angle is 180 degrees?

7

Rodney and his friends are standing in a circle in Robot Square. Rodney faces North, Fender faces 90 degrees clockwise from Rodney, and Cappy faces 90 degrees clockwise from Fender. What direction is Cappy facing?

8

In Bigweld's factory, two robotic arms form an angle of 35 degrees. If Rodney needs to create an angle that is double this size for a new machine, what angle should he create?

Answer Key

Math

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For Parents and Teachers

1

Rodney Copperbottom is standing in the middle of Robot City Square. He turns to face the Bigweld Industries building, then rotates 45 degrees clockwise to look at the Parts Department. What is the total angle he has turned?

ANSWER

45 degrees

2

Fender, the reckless robot, is dancing at a celebration. He spins around once in a full circle while celebrating Rodney's success. A full rotation equals how many degrees?

ANSWER

360 degrees

3

Cappy, the intelligent secretary robot, is organizing robot positions in the factory. She places Rodney at one angle and Fender at another angle that is 30 degrees more than Rodney's position. If Rodney is at 50 degrees, at what angle is Fender standing?

ANSWER

80 degrees

4

Bigweld's factory has two assembly line paths that meet. The angle between the first assembly line and the second assembly line is 90 degrees. This is called what type of angle?

ANSWER

a right angle

5

Piper, the ambitious young robot, is learning to measure angles with her protractor. She measures the angle between two conveyor belt directions in the factory. The angle measures 125 degrees. Is this angle acute, right, or obtuse?

ANSWER

obtuse

6

Ratchet, the helpful robot, is fixing machinery in Bigweld Industries. He needs to position a robotic arm at 180 degrees from its starting position. This means the arm will be pointing in the complete opposite direction. What type of angle is 180 degrees?

ANSWER

a straight angle

7

Rodney and his friends are standing in a circle in Robot Square. Rodney faces North, Fender faces 90 degrees clockwise from Rodney, and Cappy faces 90 degrees clockwise from Fender. What direction is Cappy facing?

ANSWER

South (or 180 degrees from North)

8

In Bigweld's factory, two robotic arms form an angle of 35 degrees. If Rodney needs to create an angle that is double this size for a new machine, what angle should he create?

ANSWER

70 degrees