## Unit 6 Lesson 13: Intersection Points

### 1 Which One Doesn’t Belong: Lines and Curves (Warm up)

#### Student Task Statement

Which one doesn’t belong?

A



B



C



D



### 2 Circles and Lines

#### Student Task Statement



1. The equation $\left(x−3\right)^{2}+\left(y−2\right)^{2}=25$ represents a circle. Graph this circle on the coordinate grid.
2. Graph the line $y=6$. At what points does this line appear to intersect the circle?
3. How can you verify that the 2 figures really intersect at these points? Carry out whatever procedure you decide.
4. Graph the line $y=x−2$. At what points does this line appear to intersect the circle? Verify that the 2 figures really do intersect at these points.

### 3 Creating Lines

#### Student Task Statement



1. Write an equation representing the circle in the graph.
2. Graph and write equations for each line described:
	1. any line parallel to the $x$-axis that intersects the circle at 2 points
	2. any line perpendicular to the $x$-axis that doesn’t intersect the circle
	3. the line perpendicular to $y=-\frac{1}{3}x+5$ that intersects the circle at $\left(6,8\right)$
3. For the last line you graphed, find the second point where the line intersects the circle. Explain or show your reasoning.

#### Images for Activity Synthesis





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