

3.16

Writing the Equations of Vertical and Horizontal Lines through a Given Point

• Example 1

Write the equation of the horizontal line that passes through the point $(-4, -7)$.

The slope of a horizontal line is 0, so we seek an equation of the form $y = b$. Because the line must contain the point $(-4, -7)$, that is, a point with a y -coordinate equal to -7 , we must have $b = -7$.

The equation of the line is thus

$$y = -7.$$

● ● ● CHECK YOURSELF 1

Write the equation of the line passing through the given point.

- Horizontal passing through $(-9, 14)$
 - Vertical passing through $(-9, 14)$
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● ● ● CHECK YOURSELF ANSWER

1.(a) $y = 14$; (b) $x = -9$.

3.16 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

Write the equation of the line passing through the given point.

2. _____

1. Horizontal; (0, 15)

2. Vertical; (-6, -7)

3. _____

4. _____

5. _____

6. _____

7. _____

3. Vertical; (0, 0)

4. Horizontal; (0, 0)

8. _____

9. _____

10. _____

5. Horizontal; (-4, 10)

6. Vertical; (7, 12)

7. Vertical; (8, -6)

8. Horizontal; (-4, 3)

9. Horizontal; (7, 12)

10. Vertical; (-9, -6)