Additional Practice

Write an equation of a line perpendicular to the given line.

1. 2x - y = 12**2.** x - 3y = 15**3.** y = -4x + 5**4.** x - 5 = 0**5.** 12x - 16y = 20

Write an equation of the line through the given point and perpendicular to the given line.

6. (0, 0); 2x - 3y = 12 **7.** (1, 4); x - 5y = 15 **8.** (0, -2); y = 2x + 5**9.** (5, 6); y - 3 = 0 **10.** (4, 0); 5x - 10y = 20

For Exercises 11–14, find the distance from the given point to the given line.

- **11.** (-1, 3); the line with equation -3x y = 9
- **12.** (0, 6); the line with equation 4x 5y = 20
- **13.** (8, 5); the line through points (4, 2) and (-1, 5)
- **14.** (2, -3); the line with equation y = -3x + 6
- **15.** Imagine that a classroom is on a three-dimensional coordinate system, as shown below.



- **a**. Describe the location of the origin.
- **b.** Estimate the ordered triples of the four corners of the door.
- c. Estimate the ordered triples of the four corners of the desk. (Assume the desk has no height.)
- **d.** Estimate the ordered triples of the four corners of the whiteboard.
- **16.** Find the midpoint of the segment with the given endpoints.
 - **a.** *A*(4, 0, 2) and *C*(0, 6, 2)
 - **b.** *D*(0, 0, 2) and *F*(4, 6, 0)
 - **c.** B(4, 6, 2) and G(0, 6, 0)
- **17.** One of the vertices of a cube with side length 5 is (0, 0, 0). What is the length of a diagonal of the cube?