NAME _____ DATE _____ PERIOD _____

3-6

Real-Life Career Activity

Virtual Reality Designer

Virtual reality is a place or an environment entirely generated by a computer. To enter a virtual reality environment, you wear a helmet connected to the computer or enter a virtual reality booth. Virtual reality designers use two- and three-dimensional sets of coordinates to draw their designs.

Imagine you are playing a virtual reality game. You appear to be standing on a coordinate plane at the origin (0, 0). The game designer wants you to see a female player standing at point (16, 12). The designer must have the computer calculate how far away the player appears to be from you and then draw her to the correct size. The farther away she is, the smaller the computer must draw her. The designer programs the computer to use the Pythagorean Theorem to calculate how many units away the player is standing from you.

$$\begin{aligned} \text{distance} &= \sqrt{16^2 + 12^2} \\ &= \sqrt{400} \\ &= 20 \end{aligned}$$

The computer draws the player so that she appears to be 20 units away from you.

Solve.

1. A third player joins the game. He appears to be standing at $(-6, -8)$. How many units away from you should he appear to be?

2. A fourth player joins the game. She appears to be standing at $(-9, 12)$. How many units away from you should she appear to be?

3. If you begin to move in the direction of the positive x-axis, which player will you be moving toward?