

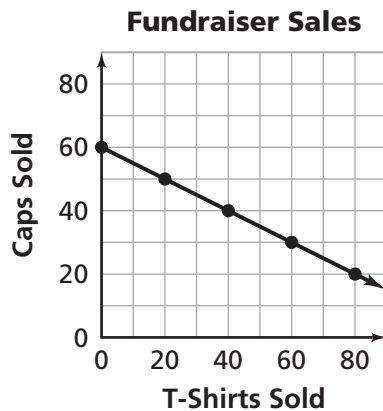
ACE

Assignment Guide for Problem 1.1

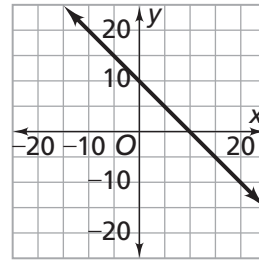
Applications: 1–8 | Connections: 28–35

Answers to Problem 1.1

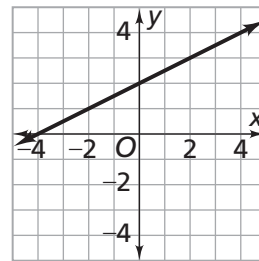
- A.**
- $\$175 = \$5(15) + \$10(10)$
 - $\$260 = \$5(12) + \$10(20)$
 - $\$650 = \$5(30) + \$10(50)$
 - $5s + 10c = P$
- B.**
- There are many possible pairs of numbers which include $(0, 60)$, $(120, 0)$, $(10, 55)$, $(20, 50)$, and $(30, 45)$.
 - The complete graph will look similar to this one.



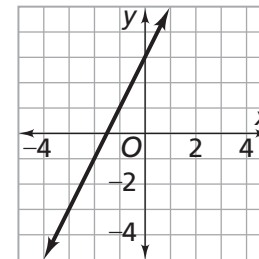
- The linear pattern in students' five plotted points should suggest some other ordered pairs that satisfy the equation.
 - No, because the price of each item and the profit goal does not change so all possible solutions will stay the same. However, the answers will be in (c, s) form instead of (s, c) form, which changes the appearance of the graph.
- C.** In each case, there are many possible solutions. It might be a good idea to encourage students to develop the habit of looking for intercept solutions first.
- The solutions pairs include $(0, 10)$, $(10, 0)$, $(1, 9)$, $(-1, 11)$, and $(-2, 12)$. The graph will also show pairs with decimals such as $(0.5, 9.5)$ and $(-3.5, 13.5)$.



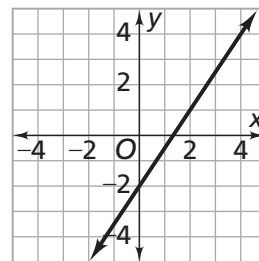
- The solution pairs include $(-4, 0)$, $(-2, 1)$, $(0, 2)$, $(2, 3)$, and $(4, 4)$. Decimal solutions include $(1, 2.5)$ and $(3, 3.5)$.



- The solution pairs include $(-1.5, 0)$, $(0, 3)$, $(1, 5)$, $(-2, -1)$, and $(-3, -3)$.



- The solution pairs include $(\frac{4}{3}, 0)$, $(0, -2)$, $(2, 1)$, $(-2, -5)$, and $(-4, -8)$.



- D.** Students should have the idea that there are many solutions to such equations and that the graph of those solutions will be a straight line. To emphasize this idea, you might choose a point not on the line to show that its coordinates do not satisfy the given equation.