

Graphing Utilities

A.1 The Viewing Rectangle

1. $(-1, 4)$

2. $(3, 4)$

3. $(3, 1)$

4. $(-6, -4)$

5.

$$X_{\min} = -6$$

$$X_{\max} = 6$$

$$X_{\text{scl}} = 2$$

$$Y_{\min} = -4$$

$$Y_{\max} = 4$$

$$Y_{\text{scl}} = 2$$

6.

$$X_{\min} = -3$$

$$X_{\max} = 3$$

$$X_{\text{scl}} = 1$$

$$Y_{\min} = -2$$

$$Y_{\max} = 2$$

$$Y_{\text{scl}} = 1$$

7.

$$X_{\min} = -6$$

$$X_{\max} = 6$$

$$X_{\text{scl}} = 2$$

$$Y_{\min} = -1$$

$$Y_{\max} = 3$$

$$Y_{\text{scl}} = 1$$

8.

$$X_{\min} = -9$$

$$X_{\max} = 9$$

$$X_{\text{scl}} = 3$$

$$Y_{\min} = -12$$

$$Y_{\max} = 4$$

$$Y_{\text{scl}} = 4$$

9.

$$X_{\min} = 3$$

$$X_{\max} = 9$$

$$X_{\text{scl}} = 1$$

$$Y_{\min} = 2$$

$$Y_{\max} = 10$$

$$Y_{\text{scl}} = 2$$

10.

$$X_{\min} = -22$$

$$X_{\max} = -10$$

$$X_{\text{scl}} = 2$$

$$Y_{\min} = 4$$

$$Y_{\max} = 8$$

$$Y_{\text{scl}} = 1$$

11.

$$X \min = -11$$

$$X \max = 5$$

$$X \text{ scl} = 1$$

$$Y \min = -3$$

$$Y \max = 6$$

$$Y \text{ scl} = 1$$

13.

$$X \min = -30$$

$$X \max = 50$$

$$X \text{ scl} = 10$$

$$Y \min = -90$$

$$Y \max = 50$$

$$Y \text{ scl} = 10$$

15.

$$X \min = -10$$

$$X \max = 110$$

$$X \text{ scl} = 10$$

$$Y \min = -10$$

$$Y \max = 160$$

$$Y \text{ scl} = 10$$

$$17. \quad P_1 = (1, 3); P_2 = (5, 15)$$

$$d(P_1, P_2) = \sqrt{(5-1)^2 + (15-3)^2}$$

$$= \sqrt{(4)^2 + (12)^2}$$

$$= \sqrt{16 + 144}$$

$$= \sqrt{160} = 2\sqrt{10}$$

$$19. \quad P_1 = (-4, 6); P_2 = (4, -8)$$

$$d(P_1, P_2) = \sqrt{(4 - (-4))^2 + (-8 - 6)^2}$$

$$= \sqrt{(8)^2 + (-14)^2}$$

$$= \sqrt{64 + 196}$$

$$= \sqrt{260} = 2\sqrt{65}$$

12.

$$X \min = -3$$

$$X \max = 7$$

$$X \text{ scl} = 1$$

$$Y \min = -4$$

$$Y \max = 9$$

$$Y \text{ scl} = 1$$

14.

$$X \min = -90$$

$$X \max = 30$$

$$X \text{ scl} = 10$$

$$Y \min = -50$$

$$Y \max = 70$$

$$Y \text{ scl} = 10$$

16.

$$X \min = -20$$

$$X \max = 110$$

$$X \text{ scl} = 10$$

$$Y \min = -10$$

$$Y \max = 60$$

$$Y \text{ scl} = 10$$

$$18. \quad P_1 = (-8, -4); P_2 = (2, 3)$$

$$d(P_1, P_2) = \sqrt{(2 - (-8))^2 + (3 - (-4))^2}$$

$$= \sqrt{(10)^2 + (7)^2}$$

$$= \sqrt{100 + 49}$$

$$= \sqrt{149}$$

$$20. \quad P_1 = (0, 6); P_2 = (3, -8)$$

$$d(P_1, P_2) = \sqrt{(3-0)^2 + (-8-6)^2}$$

$$= \sqrt{(3)^2 + (-14)^2}$$

$$= \sqrt{9 + 196}$$

$$= \sqrt{205}$$