15. \( x^2 + y^2 = 4 \)
\[
0^2 + 2^2 = 4 \quad (-2)^2 + 2^2 = 4 \quad \sqrt{2}^2 + \sqrt{2}^2 = 4 \\
4 = 4 \quad 8 \neq 4 \quad 4 = 4
\]
(0, 2) and \((\sqrt{2}, \sqrt{2})\) are on the graph of the equation.

19. \( y = 2x + 8 \)
\[
x\text{-intercept:} \quad y\text{-intercept:} \\
0 = 2x + 8 \quad y = 2(0) + 8 \\
2x = -8 \quad y = 8 \\
x = -4
\]
The intercepts are \((-4, 0)\) and \((0, 8)\).

23. \( y = -x^2 + 4 \)
\[
x\text{-intercepts:} \quad y\text{-intercepts:} \\
0 = -x^2 + 4 \quad y = -(0)^2 + 4 \\
x^2 = 4 \quad y = 4 \\
x = \pm 2
\]
The intercepts are \((-2, 0)\), \((2, 0)\), and \((0, 4)\).
29. 
(b) = (-3, 4)  
(c) = (-3, -4)  
(a) = (3, -4)

31. 
(-2, 1)  
(b) = (2, 1)  
(a) = (-2, -1)  
(c) = (2, -1)
41. a. Intercepts: \((-\frac{\pi}{2}, 0)\), \((0,1)\), and \((\frac{\pi}{2}, 0)\)

b. Symmetric with respect to the y-axis.

43. a. Intercepts: \((0,0)\)

b. Symmetric with respect to the x-axis.

45. a. Intercepts: \((-2,0)\), \((0,0)\), and \((2,0)\)

b. Symmetric with respect to the origin.
55. \( y^2 = x + 4 \)
   x-intercepts:
   \( 0^2 = x + 4 \)
   \( 0 = x \)
   \( -4 = x \)
   y-intercepts:
   \( y^2 = 0 + 4 \)
   \( y^2 = 4 \)
   \( y = \pm 2 \)

   The intercepts are \((-4,0), (0,-2)\) and \((0,2)\).

   **Test x-axis symmetry:** Let \( y = -y \)
   \((-y)^2 = x + 4 \)
   \( y^2 = x + 4 \) same

   **Test y-axis symmetry:** Let \( x = -x \)
   \( y^2 = -x + 4 \) different

   **Test origin symmetry:** Let \( x = -x \) and \( y = -y \)
   \((-y)^2 = -x + 4 \)
   \( y^2 = -x + 4 \) different

   Therefore, the graph will have x-axis symmetry.

57. \( y = \sqrt[3]{x} \)
   x-intercepts:
   \( 0 = \sqrt[3]{x} \)

   The only intercept is \((0,0)\).

   **Test x-axis symmetry:** Let \( y = -y \)
   \(-y = \sqrt[3]{x} \) different

   **Test y-axis symmetry:** Let \( x = -x \)
   \( y = \sqrt[3]{-x} = -\sqrt[3]{x} \) different

   **Test origin symmetry:** Let \( x = -x \) and \( y = -y \)
   \(-y = \sqrt[3]{-x} = -\sqrt[3]{x} \)
   \( y = \sqrt[3]{x} \) same

   Therefore, the graph will have origin symmetry.

59. \( x^2 + y - 9 = 0 \)
   x-intercepts:
   \( x^2 - 9 = 0 \)
   \( x^2 = 9 \)
   \( x = \pm 3 \)
   y-intercepts:
   \( 0^2 + y - 9 = 0 \)
   \( y = 9 \)

   The intercepts are \((-3,0), (3,0),\) and \((0,9)\).

   **Test x-axis symmetry:** Let \( y = -y \)
   \( x^2 - y - 9 = 0 \) different

   **Test y-axis symmetry:** Let \( x = -x \)
   \((-x)^2 + y - 9 = 0 \)
   \( x^2 + y - 9 = 0 \) same

   **Test origin symmetry:** Let \( x = -x \) and \( y = -y \)
   \((-x)^2 - y - 9 = 0 \)
   \( x^2 - y - 9 = 0 \) different

   Therefore, the graph will have y-axis symmetry.
65. \( y = x^2 - 3x - 4 \)
   x-intercepts:
   \[ 0 = x^2 - 3x - 4 \]
   \[ 0 = (x - 4)(x + 1) \]
   \( x = 4 \) or \( x = -1 \)
   y-intercepts:
   \[ y = 0^2 - 3(0) - 4 \]
   \( y = -4 \)

The intercepts are \((4,0)\), \((-1,0)\), and \((0,-4)\).

Test x-axis symmetry: Let \( y = -y \)
\[ -y = x^2 - 3x - 4 \text{ different} \]

Test y-axis symmetry: Let \( x = -x \)
\[ y = (-x)^2 - 3(-x) - 4 \]
\[ y = x^2 + 3x - 4 \text{ different} \]

Therefore, the graph has none of the indicated symmetries.

69. \( y = \frac{-x^3}{x^2 - 9} \)
   x-intercepts:
   \[ 0 = \frac{-x^3}{x^2 - 9} \]
   \( -x^3 = 0 \)
   \( x = 0 \)

y-intercepts:
   \[ y = \frac{-0^3}{0^2 - 9} = \frac{0}{-9} = 0 \]

The only intercept is \((0,0)\).

Test x-axis symmetry: Let \( y = -y \)
\[ -y = \frac{-x^3}{x^2 - 9} \]
\[ y = \frac{x^3}{x^2 - 9} \text{ different} \]

Test y-axis symmetry: Let \( x = -x \)
\[ y = \frac{-(-x)^3}{(-x)^2 - 9} \]
\[ y = \frac{x^3}{x^2 - 9} \text{ different} \]

Test origin symmetry: Let \( x = -x \) and \( y = -y \)
\[ -y = \frac{-(-x)^3}{(-x)^2 - 9} \]
\[ y = \frac{x^3}{x^2 - 9} \text{ same} \]

Therefore, the graph has origin symmetry.