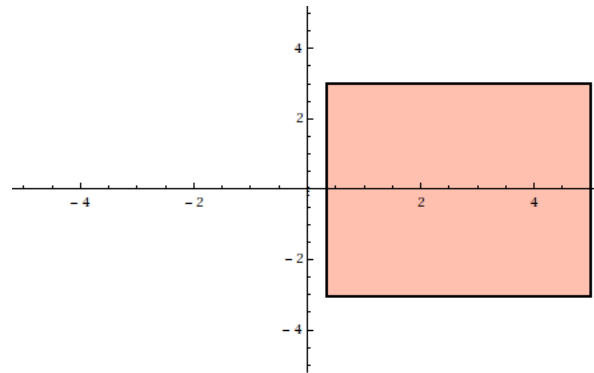
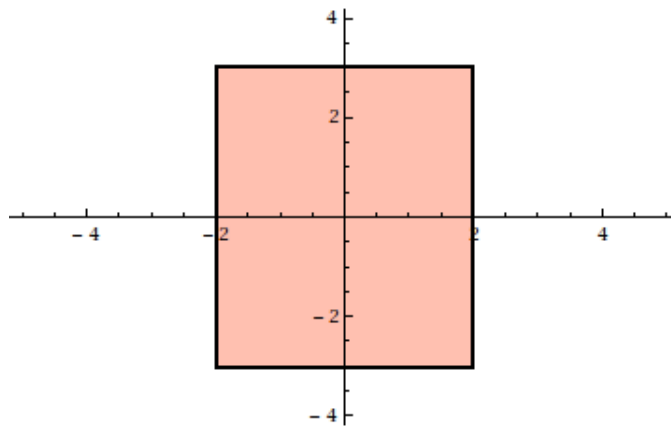


1.8.13 We draw the rectangle:



The area is $(5 - 1) \times (3 - (-3)) = 24$.

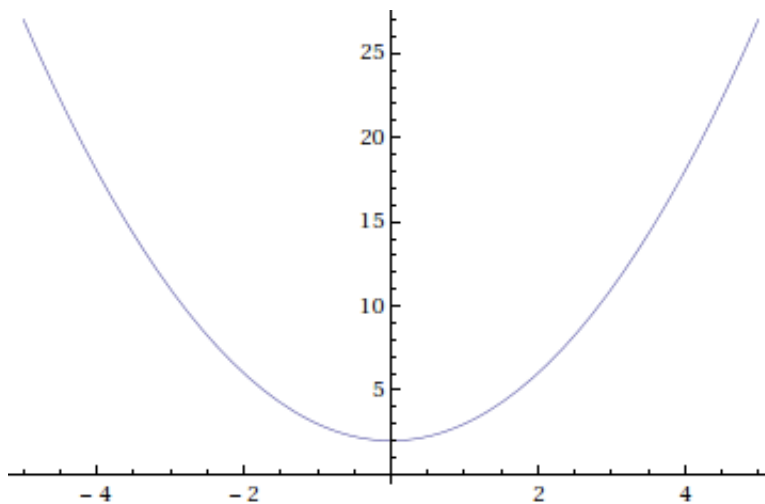
1.8.26 The desired graph is:



1.8.33 (a) $A = (2, 2)$, $B = (3, -1)$, and $C = (-3, -3)$, hence $d(A, B) = \sqrt{(3-2)^2 + (-1-2)^2} = \sqrt{10}$, $d(B, C) = \sqrt{(3-(-3))^2 + (-1-(-3))^2} = \sqrt{40}$, and $d(C, A) = \sqrt{(-3-2)^2 + (-3-2)^2} = \sqrt{50}$. $d(A, B)^2 + d(B, C)^2 = d(C, A)^2$, therefore triangle ABC is a right triangle.

(b) Area = $\frac{1}{2} \times \sqrt{10} \times \sqrt{40} = 10$.

1.8.56 Graph:



There is no x -intercept. The y -intercept is $(0, 2)$. To test for symmetry, plug in $-x$ in place for x :

$$(-x)^2 + 2 = x^2 + 2 = y$$

It follows that the equation is symmetric with respect to the y -axis.

1.8.75 Plug in $-x$ in place for x :

$$(-x)^3 + 10(-x) = -x^3 - 10x = -(x^3 + 10x) = -y$$

It follows that the equation is symmetric with respect to the origin.

1.8.89 $x^2 + y^2 - 4x + 10y + 13 = 0$

$$\iff x^2 - 4x + y^2 + 10y + 13 = 0$$

$$\iff (x^2 - 4x + 4) + (y^2 + 10y + 25) + 13 = 4 + 25$$

$$\iff (x - 2)^2 + (y + 5)^2 = 29 - 13$$

$$\iff (x - 2)^2 + (y + 5)^2 = 16$$

$$\iff (x - 2)^2 + (y + 5)^2 = 4^2$$

The center is $(2, -5)$, and the radius 4.