



**2.1.49** If  $2x - 5 < 0$ , then  $\sqrt{2x - 5}$  is a complex number. Hence,  $2x - 5 \geq 0$ , which, in turn, implies that  $x \leq \frac{5}{2}$ . It follows that

$$\text{Dom}(f) = \left[ \frac{5}{2}, \infty \right).$$

**2.1.62** (a)  $V(0) = 50 \left( 1 - \frac{0}{20} \right)^2 = 50(1)^2 = 50.$

$$V(20) = 50 \left( 1 - \frac{20}{20} \right)^2 = 50(1 - 1)^2 = 50(0) = 0.$$

(b)  $V(t)$  represents the volume of water remaining  $t$  minutes after the leakage began.

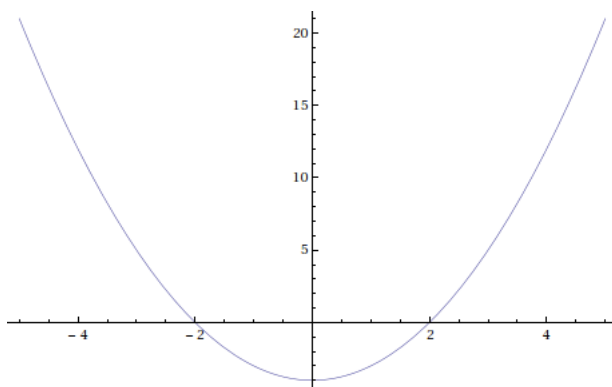
(c)

$t$	$V(t)$
0	50
5	$\frac{225}{8}$
10	$\frac{25}{2}$
15	$\frac{25}{8}$
20	0

**2.2.8** The table:

$x$	$f(x)$
$\pm 5$	21
$\pm 4$	12
$\pm 3$	5
$\pm 2$	0
$\pm 1$	-3
0	-4

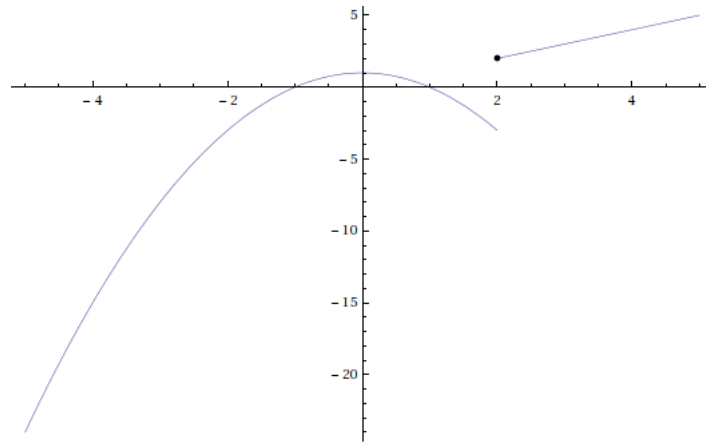
The graph:



**2.2.23** (a)  $h(-2) = 1$ ,  $h(0) = -1$ ,  $h(2) = 3$ ,  $h(3) = 3$ .

(b)  $\text{Dom}(f) = [-3, 4]$ .  $\text{Ran}(f) = [-1, 4]$ .

**2.2.46** The graph:



**2.2.55** (a) and (c) are functions. (b) and (d) are not.