24. The initial volume is $(5)(7)(3) = 105$ cm³. The new length, width, and height are $l = 5 + 2t$, $w = 7 + 2t$, and $h = 3 + 2t$, so the new volume is $V = (5 + 2t)(7 + 2t)(3 + 2t)$. Solve graphically $(5 + 2t)(7 + 2t)(3 + 2t) \geq 525$ (5 times the original volume): $t \approx 1.62$ sec.

25. $3(1) + 4(1) = 3 + 4 = 7 \neq 5$
$3(4) + 4(-2) = 12 - 8 = 4 \neq 5$
$3(3) + 4(-1) = 9 - 4 = 5$
The answer is $(3, -1)$.

26. $(5)^2 + (1)^2 = 25 + 1 = 26 \neq 25$
$(3)^2 + (4)^2 = 9 + 16 = 25$
$(0)^2 + (-5)^2 = 0 + 25 = 25$
The answer is $(3, 4)$ and $(0, -5)$.

27. $y^2 = 25 - x^2$, $y = \sqrt{25 - x^2}$ and $y = -\sqrt{25 - x^2}$

28. $y^2 = 25 - x$, $y = \sqrt{25 - x}$ and $y = -\sqrt{25 - x}$

29. $y^2 = x^2 - 25$, $y = \sqrt{x^2 - 25}$ and $y = -\sqrt{x^2 - 25}$

30. $y^2 = 3x^2 - 25$, $y = \sqrt{3x^2 - 25}$ and $y = -\sqrt{3x^2 - 25}$

31. $x = 3(2) = 6$, $y = 2^2 + 5 = 9$

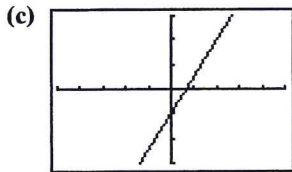**32.** $x = 5(-2) - 7 = -17$, $y = 17 - 3(-2) = 23$

33. $x = 3^3 - 4(3) = 15$, $y = \sqrt{3 + 1} = 2$

34. $x = |-8 + 3| = 5$, $y = \frac{1}{-8} = -\frac{1}{8}$

35. (a)

t	$(x, y) = (2t, 3t - 1)$
-3	$(-6, -10)$
-2	$(-4, -7)$
-1	$(-2, -4)$
0	$(0, -1)$
1	$(2, 2)$
2	$(4, 5)$
3	$(6, 8)$

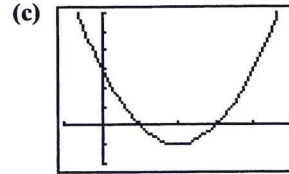**(b)** $t = \dfrac{x}{2}$, $y = 3\left(\dfrac{x}{2}\right) - 1 = 1.5x - 1$. This is a function.

(c)

[-5, 5] by [-3, 3]

36. (a)

t	$(x, y) = (t + 1, t^2 - 2t)$
-3	$(-2, 15)$
-2	$(-1, 8)$
-1	$(0, 3)$
0	$(1, 0)$
1	$(2, -1)$
2	$(3, 0)$
3	$(4, 3)$

(b) $t = x - 1$, $y = (x - 1)^2 - 2(x - 1)$
$\quad\quad = x^2 - 2x + 1 - 2x + 2$
$\quad\quad = x^2 - 4x + 3$
This is a function.

(c)

[-1, 5] by [-2, 6]

37. (a)

t	$(x, y) = (t^2, t - 2)$
-3	$(9, -5)$
-2	$(4, -4)$
-1	$(1, -3)$
0	$(0, -2)$
1	$(1, -1)$
2	$(4, 0)$
3	$(9, 1)$

(b) $t = y + 2$, $x = (y + 2)^2$. This is not a function.

(c)
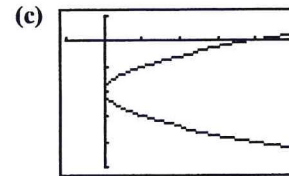
[-1, 5] by [-5, 1]

38. (a)

t	$(x, y) = (\sqrt{t}, 2t - 5)$
-3	$\sqrt{-3}$ not defined
-2	$\sqrt{-2}$ not defined
-1	$\sqrt{-1}$ not defined
0	$(0, -5)$
1	$(1, -3)$
2	$(\sqrt{2}, -1)$
3	$(\sqrt{3}, 1)$

(b) $t = x^2$, $y = 2x^2 - 5$. This is a function.

(c)
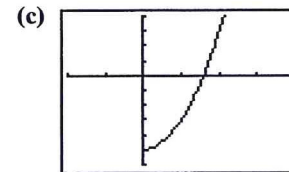
[-2, 4] by [-6, 4]

39. (a) By the vertical line test, the relation is not a function.

(b) By the horizontal line test, the relation's inverse is a function.

40. (a) By the vertical line test, the relation is a function.

(b) By the horizontal line test, the relation's inverse is not a function.

41. (a) By the vertical line test, the relation is a function.

(b) By the horizontal line test, the relation's inverse is a function.