Quadratic Formula

$ax^2 + bx + c = 0$ $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

1. $x^2 - 5x = 7$

$-7 \quad -7$

$a=1 \quad b=-5 \quad c=-7$

$x^2 - 5x - 7 = 0$

$x = \dfrac{5 \pm \sqrt{(-5)^2 - 4(1)(-7)}}{2(1)} = \dfrac{5 \pm \sqrt{25+28}}{2}$

$= \dfrac{5 \pm \sqrt{53}}{2}$

2. $x^2 - 6x + 10 = 0$ $\quad a=1 \quad b=-6 \quad c=10$

$x = \dfrac{6 \pm \sqrt{(-6)^2 - 4(1)(10)}}{2(1)} = \dfrac{6 \pm \sqrt{36-40}}{2}$

$= \dfrac{6 \pm \sqrt{-4}}{2} = \dfrac{6 \pm i\sqrt{4}}{2} = \dfrac{6 \pm 2i}{2} = 3 \pm i$

3. $16x^2 - 23x = 17x - 25$

$16x^2 - 40x + 25 = 0$

$a = 16$
$b = -40$
$c = 25$

$x = \dfrac{40 \pm \sqrt{(-40)^2 - 4(16)(25)}}{2(16)}$

$= \dfrac{40 \pm \sqrt{1600 - 1600}}{32} = \dfrac{40 \pm 0}{32} = \dfrac{40}{32} = \dfrac{5}{4}$

62.) $h = -16t^2 + 32t + 6$

$h = (-16t^2 + 32t) + 6$

$h = -16(t^2 - 2t) + 6$

$h = -16(t^2 - 2t + 1) + 6 + 16$

$h = -16(t-1)^2 + 22$

Vertex: $(1, 22)$

$t = 1$ sec $h = 22$ ft.

p. 296/ # 3 - 48 (multiples of 3), 49, 50, 52, 54 due FRIDAY

p. 289/ #41-51, 62-65, 69, 71, 73 due Wed.