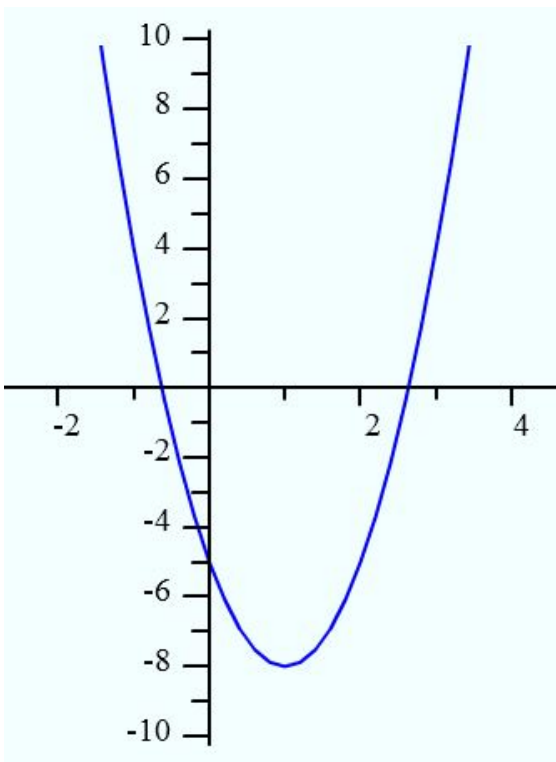


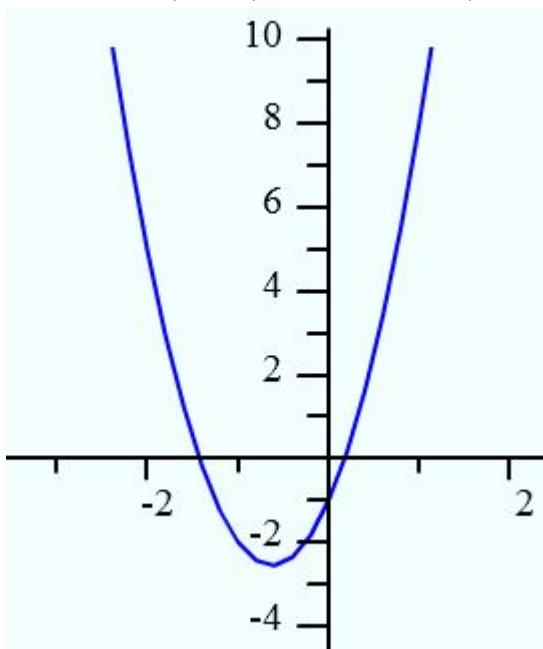
Algebra II Homework #16 – Answer Key

- 1) No Solutions $x \neq -4, 12$
- 2) $\frac{3}{2}$ or 1.5 hours
- 3) $a = \frac{30my}{8y - 9x}$ $m \neq 0, y \neq 0, a \neq 0, x \neq 0, 8y \neq 9x$
- 4) 12 hours
- 5) No Solution $x \neq -5$
- 6) $3(x - 1)^2 = 6$ $x = \pm\sqrt{2} + 1$ $x = \sqrt{2} + 1$ or $-\sqrt{2} + 1$
- 7) $y = 3(x - 1)^2 - 8$ $V = (1, -8)$ $x = 1$ $\text{min} = -8$ skinny factor 3



- 8) $A = -2(x - 60)^2 + 7200$ width = 60 length = 120 Area = 7200
- 9) $5\left(x + \frac{3}{10}\right)^2 = \frac{149}{20}$ $x = \pm\frac{\sqrt{149}}{10} - \frac{3}{10}$ $x = \frac{\sqrt{149} - 3}{10}$ or $x = \frac{-\sqrt{149} - 3}{10}$

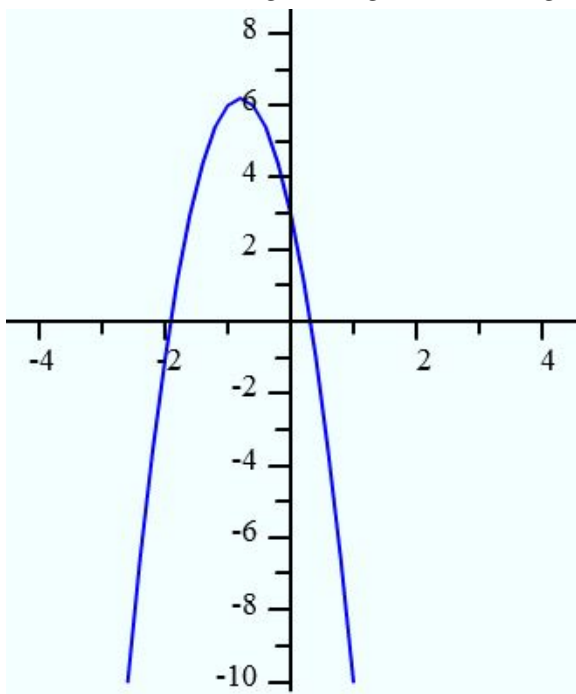
10) $y = 4\left(x + \frac{5}{8}\right)^2 - \frac{41}{16}$ $V = \left(\frac{-5}{8}, \frac{-41}{16}\right)$ $x = \frac{-5}{8}$ $\min = \frac{-41}{16}$ skinny factor 4



11) $y = -16x^2 + 180x + 9$ $y = -16\left(x - \frac{45}{8}\right)^2 + \frac{2061}{4}$ 5.625 seconds
515.25 feet

12) $4\left(x + \frac{3}{2}\right)^2 = 14$ $x = \pm\sqrt{\frac{7}{2}} - \frac{3}{2}$ $x = \frac{-3 + \sqrt{14}}{2}$ or $\frac{-3 - \sqrt{14}}{2}$

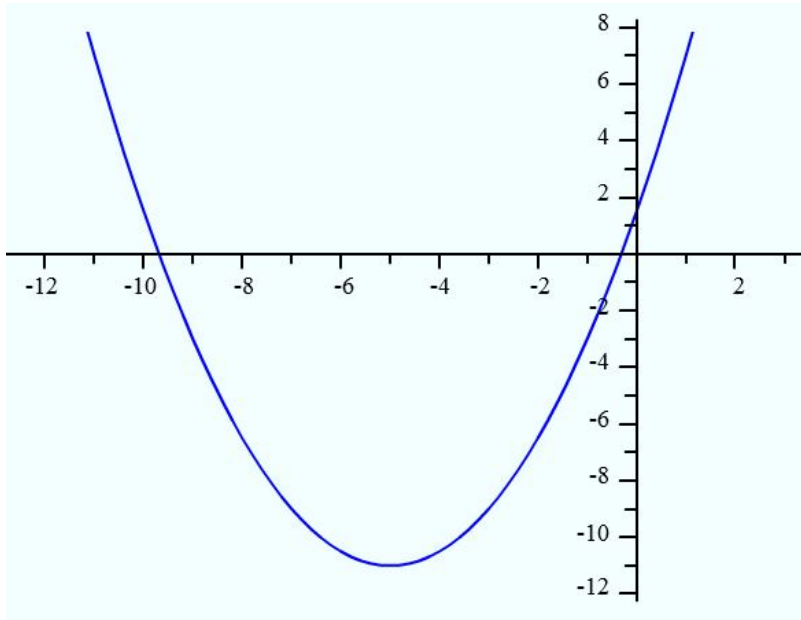
13) $y = -5\left(x + \frac{4}{5}\right)^2 + \frac{31}{5}$ $V = \left(\frac{-4}{5}, \frac{31}{5}\right)$ $x = \frac{-4}{5}$ $\max = \frac{31}{5}$ skinny factor 5



14) $A = -1(x - 215)^2 + 46225$ width = 215 length = 215 Area = 46225

$$15) -3\left(x + \frac{7}{6}\right)^2 = \frac{61}{12} \quad x = \pm \frac{\sqrt{61}}{6} - \frac{7}{6} \quad x = \frac{\sqrt{61}-7}{6} \quad \text{or} \quad x = \frac{-\sqrt{61}-7}{6}$$

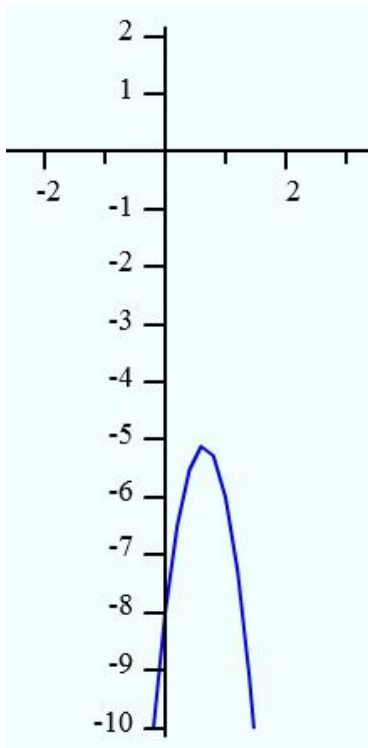
$$16) y = \frac{1}{2}(x+5)^2 - 11 \quad V = (-5, -11) \quad x = -5 \quad \text{min} = -11 \quad \text{fat factor } 2$$



$$17) y = -16x^2 + 60x + 7 \quad y = -16\left(x - \frac{15}{8}\right)^2 + \frac{253}{4} \quad 1.875 \text{ seconds} \quad 63.25 \text{ feet}$$

$$18) 7(x+1)^2 = 13 \quad x = \pm \sqrt{\frac{13}{7}} - 1 \quad x = \frac{-7 + \sqrt{91}}{7} \quad \text{or} \quad \frac{-7 - \sqrt{91}}{7}$$

$$19) y = -7\left(x - \frac{9}{14}\right)^2 - \frac{143}{28} \quad V = \left(\frac{9}{14}, \frac{-143}{28}\right) \quad x = \frac{9}{14} \quad \text{max} = \frac{-143}{28} \quad \text{skinny factor } 7$$



- 20) $V = -36(x - 3)^2 + 324$ height of box = 3 width of box = 6 length of box = 18
Volume = 324