Math 150 Week in Review 2 Answer Key

1. \[ h = \frac{S - 2lw}{2(w + l)} \]

2. (a) \[ x = -3 \pm \frac{\sqrt{35}}{2} \] OR \[ x = \frac{-6 \pm \sqrt{35}}{2} \]
   (b) \[ x = 8 \]
   (c) \[ x = 2, 3 \]
   (d) \[ x = -1 \pm \sqrt{6} \]
   (e) \[ x = 81 \]

3. (a) No real solutions
   (b) 2 real solutions

4. 10 hours

5. 4 ounces

6. \[ 12 \times 8 \] (Length is 12 ft. Width is 8 ft.)

7. 6 mph

8. (a) \((-\infty, -\frac{17}{7}) \cup (-\frac{5}{7}, \infty)\)
   (b) \([-\frac{5}{7}, 2]\)
   (c) \((-\infty, \frac{3}{7}) \cup (2, \infty)\)
   (d) \((-\infty, -2) \cup (\frac{1}{2}, 1) \cup [3, \infty)\)

9. See full solutions from live review.

10. \[ d(A, B) = 7\sqrt{2} \]
    \[ d(B, C) = 4\sqrt{2} \]
    \[ d(A, C) = \sqrt{130} \]
    Triangle ABC is a right triangle since \[ d(A, B)^2 + d(B, C)^2 = d(A, C)^2. \]
    Area of triangle is 28.

11. (a) x-intercept: (2, 0)
    y-intercept: (0, 8)
    Does not have any type of symmetry.
   (b) x-intercept: None
    y-intercept: (0, 4)
    Symmetric with respect to the y-axis.
   (c) x-intercept: (0, 0)
    y-intercepts: (0, 0), (0, 2), (0, -2)
    Symmetric with respect to the origin.

12. (a) \((x - 5)^2 + (y + 6)^2 = 144\)
    (b) \((x - 6)^2 + (y - 2)^2 = 17\)

13. Center: \(\left(\frac{3}{2}, -\frac{5}{4}\right)\), \(r = \frac{\sqrt{69}}{4}\)

14. (a) \(x = -1.7542, -0.3424, 3.8362\)
    (b) \([-6.4033, 0] \cup [6.4033, \infty)\)