Algebra 2
WS: 2.1 – 2.2 Review   **ANSWER KEY**

1. Translation up 3
2. Translation left 5
3. Reflection in the *x*-axis, vertical stretch by a factor of 3, translation left 6, translation down 4
4. Translation right 1, translation up 5
5. Translation right 4, translation up 3
6. Vertical compression by a factor of 1/3, translation right 2, translation up 1
7. Reflection in the *x*-axis, horizontal stretch by a factor of 2
8. Vertical compression by a factor of 1/3, translation up 2
9. Vertical compression by a factor of 1/3, translation left 1
10. $g(x) = -\frac{1}{2}(x+2)^2$, Vertex: (-2, 0)
11. $g(x) = -(3x+4)^2 - 4$, Vertex: $\left(-\frac{4}{3}, -4\right)$
12.
    a. $g(x) = (2x-3)^2 - 4$
    b. $g(x) = 4(x-3)^2 - 4$
13. Vertex: (2, -4); AOS: $x = 2$
14. Vertex: (2, -1); AOS: $x = 2$
15. Vertex: (2, 0); AOS: $x = 2$
16. Vertex: (0, -1); AOS: $x = 0$
17. Vertex: (2, -3); AOS: $x = 2$
18. Vertex: (-2, 2); AOS: $x = -2$
19. Lowest; the *y*-values on either side of $x = 3$ are greater than the *y*-coordinate of the vertex
20. Minimum: 12; D: $(-\infty, \infty)$; R: $[12, \infty)$; increasing to the right of $x = 0$; decreasing to the left of $x = 0$
21. Minimum: 2.5; D: $(-\infty, \infty)$; R: $[2.5, \infty)$; increasing to the right of $x = -3$; decreasing to the left of $x = -3$
22.
    a. 1/6 mile from the bridge
    b. The maximum height is 0.083 mile or 1/12 mile