Algebra 2, Quiz 17.3, Final Review

Please show your work. If the answer to a quadratic formula is complex, give the answer as a complex number in standard form (do **not** write "no answer").

1. Define equivalent expressions and equivalent equations.

2. Define a function.

3. Define the domain and range of a function.

4. Sketch a graph with a triple zero and a double zero at the location of your choice. Provide a possible formula for your sketched graph.

5. Solve the following equation by **completing the square**, and check your answer with the quadratic formula: $4=6x-2x^2$

6. Give the growth factor that corresponds to a decay rate of 1.5%.

7. Solve $4 \cdot e^t = 9.1$

8. Solve $1100(1.035)^t = 1000(1.055)^t$

9. Solve $2\log x + 1 = 2 - 3\log x$

10. Give the zeros, holes, vertical asymptotes, long-run behavior and y-intercept of the rational function:

$$\frac{(x^2-1)(x-7)}{(2x-3)(x^2-x-2)}$$

11. Given $p(t)=3t^2-15$ find the values of $t$ such that $p(t)=0$

For **12-16** find the probability given that two fair 6-sided dice are rolled and the face values added (it will help you to construct a table for the two events with the sum in the table):

12. $P(2)$

13. $P(7)$

14. $P(7 \text{ or } 11)$

15. $P(\text{more than } 10)$

16. $P(7|\text{first die was a } 1)$