Algebra 2 Unit 8 Review Key

1. a) Population is the students at the school. Parameter is the strictness of parents
   b) Survey
   c) Answers Vary
   d) List all students by ID number and use a random number generator to choose 100 students

2. Option 3- most random and unbiased able to get

3. 84% are shorter than 68 inches. 25% are shorter than about 62 inches

4. a) Breaths: $\bar{x} = 11.6$, Median $= 11$, Mode $=$ None, Range $= 7$, $\sigma \approx 2.42$
      Blinks: $\bar{x} = 26.4$, Median $= 27$, Mode $= 27$, Range $= 10$, $\sigma \approx 3.38$
   b) Breaths: $\bar{x} = 13.6$, Median $= 13$, Mode $=$ None, Range $= 7$, $\sigma \approx 2.42$
   c) Blinks: $\bar{x} = 13.2$, Median $= 13.5$, Mode $= 13.5$, Range $= 5$, $\sigma \approx 1.69$

5. There's two outliers in each data set that will affect the mean

6. a) $M = 1.96 \cdot \frac{0.54}{\sqrt{9}} = 0.3528$ 95% confident that μ will be between 97.5472 and 98.2528
   b) $M = 1.96 \cdot \frac{0.51}{\sqrt{9}} = 0.3332$ 95% confident that μ will be between 98.2668 and 98.9332
   c) Margin of error for women is larger because that data has a larger standard deviation

7. a) 47.5% b) 83.85% c) 81.5% d) 16% e) 97.5% f) 97.5%

8. a) self-select; biased
   b) convenience- biased
   c) random- unbiased

9. a) $M = \pm\frac{1}{\sqrt{450}} \approx 0.047 = 4.7\%$
   b) $\bar{x} = \frac{325}{450} = 72.2\%$
      The interval likely to contain the percent of patients that agree is 67.5% to 76.9%

10. a) Survey
    b) Observation

11. $M = 1.645 \cdot \frac{7.3}{\sqrt{300}} \approx 6.933$ 90% confident that μ will be between 57.367 and 71.233

12. Min $= 8$, $Q_1 = 12$, Median $= 15$, $Q_3 = 17$, Max $= 20$

13. Answers May Vary. Sample answer:
    Flip 20 coins at one time. Let Head be a correct response and Tail be an incorrect response. Count the number of coins that land on head and record the result. Complete 100 trials of the simulation.