Name: _____

Class: _____

Score: _____

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

1. (4 points) Solve:
$$\begin{cases} x + y = 2 \\ y = x^2 - 4 \end{cases}$$

1. _____

2. (4 points) Solve:
$$\begin{cases} x + y = 1 \\ x^2 + xy - y^2 = -5 \end{cases}$$

2. _____

3. (4 points) Solve:
$$\begin{cases} x = y - 1 \\ y = x^2 + 1 \end{cases}$$

3. _____

4. (4 points) Solve:

$$\begin{cases} 3x^2 + 4y^2 = 16 \\ 2x^2 - 3y^2 = 5 \end{cases}$$

4. _____

5. (4 points) The sum of two numbers is 14 while their product is 40. Find all such numbers.

5. _____

6. (4 points) The difference of two numbers is 12 while their product is 45. Find all such numbers.

6. _____

7. (4 points) y varies inversely as cube root of x.
y is **5** when x is 8. **Find y when x is** 1000.

7. _____

8. (4 points) y varies directly as fourth power of x.
y is **1250** when x is 5. **Find y when x is** 4.

8. _____

9. (5 points) The intensity of a light source varies inversely as the square of its distance from its source. If the intensity is 30 **lumens at the distance of** 2 **ft, Find its intensity when the distance is** 4 **feet.**

9. _____

Study Guide 11

Total Points: 50

10. (4 points) Assume that y varies directly as z and inversely as the cube of x. y is 3 when z is 4 and x is 2. Find y when z is 2 and x is 4.

10. _____

11. (4 points) The stopping distance of a car is directly proportional to the square root of its speed. If a car traveling at 36 mph has a stopping distance of 120 ft, Find the stopping distance of a car that is traveling at 64 mph. Round your answer to a whole number.

11. _____

12. (5 points) Assume that z varies directly as the square root of the sum of x^2 and y^2. z is 10 when x is 4 and y is 3. Find z when x is 6 and y is 8.

12. _____