**Part 1:** For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question

1. Which function is even? **SCRAP**
2. If is an even function, which function must also

be even?

1. Which equation represents an odd function?
2. The graph of the function is sketched below.



Which equation could represent ?

1. Which description could represent the graph of

, if is an integer?

1. As

and the graph has 3 -intercepts.

1. As

and the graph has 3 -intercepts.

1. As

and the graph has 4 -intercepts.

1. As

and the graph has 4 -intercepts.

1. The roots of the equation are
2. and
3. , only
4. and
5. and
6. A sketch of is shown below.



An equation of for could be

1. Which equation represents the equation of the parabola

with focus and directrix ?

1. The solution to the equation are
2. If , , and , where is

the imaginary unit, then equals

1. The graph of is shown below.



What is the remainder when is divided by

?

1. The solutions to the equation are
2. Factored completely, is equivalent to
3. If , then equals
4. What is the solution set of the equation

?

1. Given , the solution of

 is

1. , only

**Part 2:** Show all necessary work to receive credit.

1. The distance needed to stop a car after applying the brakes varies directly with the square of the car’s speed. The table below shows stopping distances for various speeds.



Determine the average rate of change in braking distance, in ft/mph, between one car traveling at 50 mph and one traveling at 70 mph. Explain what this rate of change means as it relates to braking distance.

1. Express in form.
2. Algebraically solve for :
3. Algebraically determine the values of that satisfy the system of equations below:
4. Solve the following system of equations algebraically.
5. Determine the quotient and remainder when is divided by . Express your answer in the form .
6. Given and , determine in the form . Is a factor of ? Explain.
7. When the function is divided by the quotient is . State in standard form.
8. Solve the following system of equations algebraically for all values of , and :