Gimme 10

1. Let . Which of the following statements describes the end behavior of ?
2. and
3. and
4. and
5. and
6. A graph of a function

   Description automatically generatedThe sinusoidal function shown can be modeled by the function for some constants and . Find the value of .
7. The graph of a quintic (5th degree) function, , is tangent to the -axis at . Which of the following could describe the zeros of ?
8. 1 real zero, 4 imaginary zeros
9. 2 real zeros, 0 imaginary zeros
10. 3 real zeros, 2 imaginary zeros
11. 2 real zeros, 3 imaginary zeros
12. Angle is shown in standard position, with terminal ray passing through Point P.

A circle with a point in the center

Description automatically generatedFind

1. The average U.S. resident produces about 4.5 pounds of trash per day, which equates to 1,642 pounds of trash annually. Suppose an individual was motivated to reduce their trash production by 10% each year. Which of the following equations could be used to model the daily number of pounds of trash produced by the individual, , after **days**?
2. If and , what is the equation for ?
3. The graphs of two quadratic functions and are shown. The solid curve represents and the dashed curve represents . Let . Which of the following statements is true?

A graph of function on a grid

Description automatically generated

1. As increases without bound, decreases without bound.
2. The graph of has vertical asymptotes at and .
3. The graph of has -intercepts at and .
4. The domain of is all real numbers where and .
5. The table gives values of a logarithmic function for selected values of .

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 3 | 9 | 27 | 81 | 243 |
|  | 0 | 7 | 14 | 21 | 28 | 35 |

Which of the following could be the equation for ?

1. A graph of a function

   Description automatically generatedThe complete graph of is shown below. What is the range of ?

1. Consider the polar function . On the interval , which of the following statements is true?
2. is increasing and the distance between a point on the curve, , and the origin is increasing.
3. is decreasing and the distance between a point on the curve, and the origin is increasing.
4. is increasing and the distance between a point on the curve, and the origin is decreasing.
5. is decreasing and the distance between a point on the curve, and the origin is decreasing.