SHOW ALL WORK on the worksheet

Part 1-Graphing:

Graph each function and state the domain, range, intercepts, asymptote, and end behavior

|  |  |  |  |
| --- | --- | --- | --- |
| Exponential Growth    Domain:  Range:  x-int: 0.42  y-int: -1  Asymptote:  EB: | Exponential Decay  Domain:  Range:  x-int: None  y-int: 0.5  Asymptote:  EB: | Exponential with base e  Domain:  Range:  x-int: -4.39  y-int: -2  Asymptote:  EB: | Logarithms  Domain:  Range:  x-int: -1  y-int: 0.63  Asymptote:  EB: |

Part 2-Exponential Increase/Decrease Models and Compound Interest:

1. In 1994, there were 35 homes with internet in the small town of Oak Glen. The number of subscribers doubled per year after 1994 until 2000. How many homes had internet in 1999?

1120 homes had internet in 1999

2. The population of Yucaipa, CA can be modeled by where t is the number of years since 1990. What was the population in 1990? By what percent did the population increase by each year?

1990 the population was 5347 and increased by 16% each year

3. An adult takes aspirin to help with a headache. Each hour, the amount of aspiring in the person’s system decreases by about 29%. If 51.24 mg of aspiring is left after 6 hours, how much did the adult take initially?

Started with 400 mg of aspiring

4. You deposit $1600 in a bank account. Find the balance after 3 years for each of the following situations:

(a) The account pays 2.5% annual interest compounded monthly.

$1724.48

(b) The account pays 1.75% annual interest compounded quarterly.

$1686.05

(c) The account pays 4% annual interest compounded semi-annually.

$1801.86

(d) The account pays 2% annual interest compounded continuously.

$1803.99

Part 3- Operations with e:

Simplify.

5. 6. 7. 8.

= = =

Part 4-Evaluating Logarithms:

Evaluate without a calculator.

9. 10. 11. 12.

=

13. 14. 15. 16.

Part 5- Finding Inverses:

Find the inverse function for each.

17. 18. 19.