**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Period: \_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_**

**Algebra 2 6.1-6.2 Review WS**

1. Sketch each graph, then answer the questions. ***NC*** \*Note: AROC = Ave. Rate of Change\*

|  |  |  |
| --- | --- | --- |
| **a.** | **b.** | **c.** |
|  |  |  |
| **Domain:** | ***y*-intercept:** | ***x*-intervals where** |
| **Range:** | **Range:** | ***x*-intervals where** |
| ***y*-intercept:** | **End Behavior:** | **Asymptote:** |
|  | | |
| **d.** | **e.** | **f.** |
|  |  |  |
| **AROC on** | **AROC on** | **AROC on** |
| **End Behavior:** | **Range:** | ***x*-intervals where** |
| ***x*-intervals where** | ***y*-intercept:** | **Asymptote:** |

1. Write the equation for an exponential function with base 6 that has been reflected across the *y*-axis, vertically dilated by a scale factor of 12, translated right 2 and down 4.

|  |  |
| --- | --- |
| **3.** Calculate the account value if the principal is $50,000, the interest rate is 4.5%, the compounding period is quarterly, and the investment is left untouched for 20 years. ***C*** | **4.** Write an exponential function for the graph shown. ***NC*** |

1. A ball rebounds to a height of 30.0 cm on the third bounce (3, 30.0) and to a height of 5.2 cm on the sixth bounce (6, 5.2). ***C***
   1. Write an equation for the exponential function of the form , where *n* is the number of bounces and is the height the ball reaches in cm.
   2. From what height was the ball initially dropped?
2. A radioactive sample was created in 1980. In 2002, a technician measures the radioactivity at 42.0 rads. One year later the radioactivity is 39.8 rads. ***C***
   1. Write an equation for the exponential function of the form , where *t* is the number of years since 1980 and  is the radioactivity level of the sample in rads.
   2. Calculate the radioactivity in 1980.
   3. Predict the radioactivity in 2021.