Algebra II Name _____

Exp/Log #1

Tell whether the function represents exponential growth or exponential decay. Then graph the function. State the domain, range and equation of the asymptote.

1. $y = 6^x$

2. $f(x) = 3\left(\frac{2}{5}\right)^x$

3. $y = (0.25)^x$

4. $f(x) = 2\left(\frac{4}{3}\right)^x$

5. The value of a mountain bike y (in dollars) can be approximated by the model $y = 200(0.75)^t$, where t is the number of years since the bike was new.

a. Tell whether the model represents exponential growth or exponential decay.
b. Identify the annual percent increase or decrease in the value of the bike.
c. Estimate when the value of the bike will be $50.

6. In 2006, there were approximately 233 million cell phone subscribers in the United States. During the next 4 years, the number of cell phone subscribers increased by about 6% each year.

a. Write an exponential growth model giving the number of cell phone subscribers y (in millions) t years after 2006. Estimate the number of cell phone subscribers in 2008.
b. Estimate the year when the number of cell phone subscribers was about 278 million

Use the given information to find the amount A in the account earning compound interest after 6 years when the principal is $3500.

7. r = 2.16%, compounded quarterly
8. r = 2.29%, compounded monthly
9. r = 1.83%, compounded daily

Rewrite the following in the form $y = a(1 + r)^t$ or $y = a(1 – r)^t$. Then state the growth or decay rate.

10. $y = a(2)^{t/3}$

11. $y = a(0.25)^{t/9}$