Pre-AP Algebra 2
8.1 D2 Exponential Graphing and Interest Rates

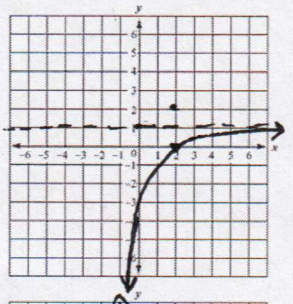
Name: Key Hour: _____
This is considered an in-class assignment. It is due today before you leave my classroom.

1. $f(x) = -\left(\frac{1}{4}\right)^{x-2} + 1$

Growth / Decay

Parent Function: $y = \left(\frac{1}{4}\right)^x$

Transformations: Raxa, → 2, ↑ 1

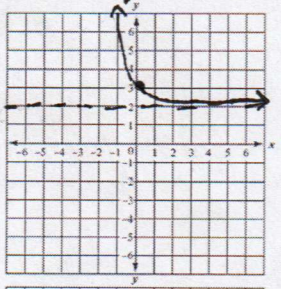


2. $y = 2\left(\frac{1}{3}\right)^x + 2$

Growth / Decay

Parent Function: $y = \left(\frac{1}{3}\right)^x$

Transformations: Vsbfs 2, ↑ 2

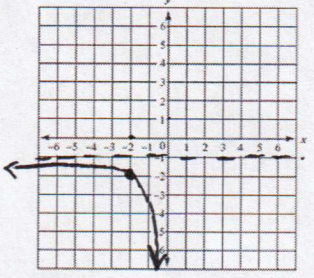


3. $g(x) = -5^{x+2} - 1$

Growth / Decay

Parent Function: $y = 5^x$

Transformations: Raxa, ← 2, ↓ 1

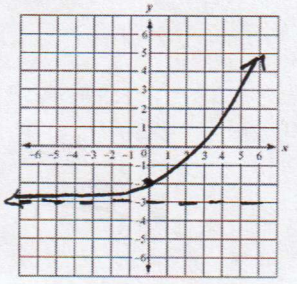


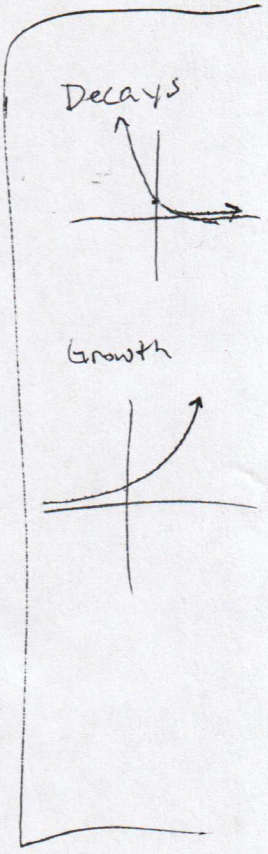
4. $y = \frac{1}{2} * 2^x - 3$

Growth / Decay

Parent Function: $y = 2^x$

Transformations: Shrink by $\frac{1}{2}$, ↓ 3





5. If $12,000 is invested at 4% annual interest compounded monthly, how much will the investment be worth in 10 years? Give your answer to the nearest dollar.

$A = P\left(1 + \frac{r}{n}\right)^{nt}$ $A = 12000\left(1 + \frac{0.04}{12}\right)^{12 \cdot 10}$ $\approx \$17890$

6. Rebecca is training for a marathon. Her weekly long run is currently 5 miles. If she increases her mileage each week by 10%, will she complete a 20 mile training run within 15 weeks?

$A = 5\left(1 + \frac{0.10}{1}\right)^{1 \cdot 15} \approx 20.886$ Yes, she would reach 20.886 miles after 15 weeks.

7. Naya invests $7500 in an account which accrues interest continually at a rate of 4.5%. How much money will be in the account after 8 years?

$A = 7500e^{0.045 \cdot 8} \approx \$10749.97$