

PreCalculus '13-14

Name: _____

Dr. Quattrin

Ln/Exponential Test-- CALCULATOR ALLOWED

Round to 3 decimal places.

Score _____

Show all work.

Formulas: $S = P \left(1 + \frac{r}{n} \right)^{nt}$

$$S = \frac{P \left(\left(1 + \frac{r}{n} \right)^{nt} - 1 \right)}{\frac{r}{n}}$$
$$L = \frac{P \left(1 - \left(1 + \frac{r}{n} \right)^{-nt} \right)}{\frac{r}{n}}$$

1. Suppose you can take out a 30 year loan for a \$775,000 house, at a fixed APR of 3.5% compounded monthly. What are your monthly payments and how much will you actually pay the bank?

2. Suppose you invest \$400 per month at 4.5% for 10 years, then invest the total at 10% compounded monthly for 20 years. How much will you have 30 years from now?

3a. $\frac{d}{dx}[5x^2e^{-x} + 1]$

3b. $D_x[(4x-3)^5(2x^2+1)^{10}]$

4. Find the zeros and Domain of $y = 8(2x - x^2)e^{-2x}$. Show the supporting algebraic work.

5. Find the critical values and extreme values of $y = 8(2x - x^2)e^{-2x}$. Show the derivative and algebra to support the critical values.

6. Find the traits and **sketch** $y = 8(2x - x^2)e^{-2x}$.

Domain:

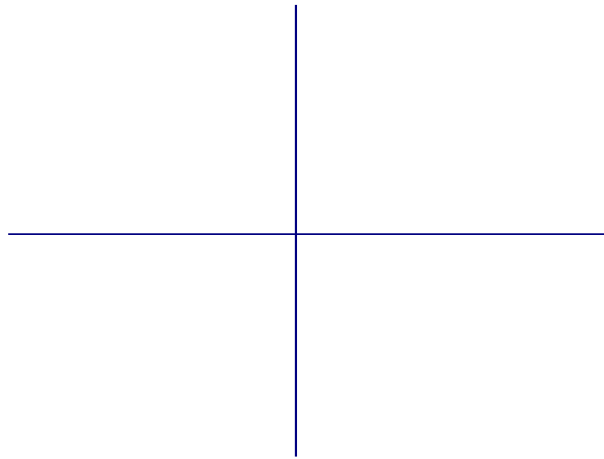
Range:

Y – Int:

End Behavior:

Zeros:

Extreme Points:



7. Find the zeros and Domain of $y = (x^2)\sqrt{16-x^2}$. Show the supporting algebraic work.

8. Find the critical values and extreme values of $y = (x^2)\sqrt{16-x^2}$. Show the derivative and algebra to support the critical values.

9. Find the traits and **sketch** of $y = (x^2)\sqrt{16 - x^2}$.

Domain:

Y - Int:

Zeros:

Range:

End Behavior:

Extreme Points:

