

PreCalculus '14-15

Name: _____

Dr. Quattrin

Exponential Test-- CALCULATOR ALLOWED

Round to 3 decimal places.

Score _____

Show all work.

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

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

1. Suppose you can take out a 30-year loan for a \$645,000 house, at a fixed APR of 4.25% compounded monthly. What are your monthly payments and how much will you actually pay the bank?

2. Suppose that, when you graduate from college, you must begin to pay off your \$120,000 student loan. If the loan was at 5% compounded monthly and you can make \$1000 payments per month, how long will it take to pay off the loan?

3a. $\frac{d}{dx}[7x^2e^{-3x}]$

3b. $D_x[(4x^5 - 2)^6(3x^3 + 7)^5]$

4. Find the zeros and Domain of $y = (3x - x^2)e^x$. Show the supporting algebraic work.

5. Find the critical values and extreme values of $y = (3x - x^2)e^x$. Show the derivative and algebra to support the critical values.

6. Find the traits and **sketch** $y=(3x-x^2)e^x$.

Domain:

Range:

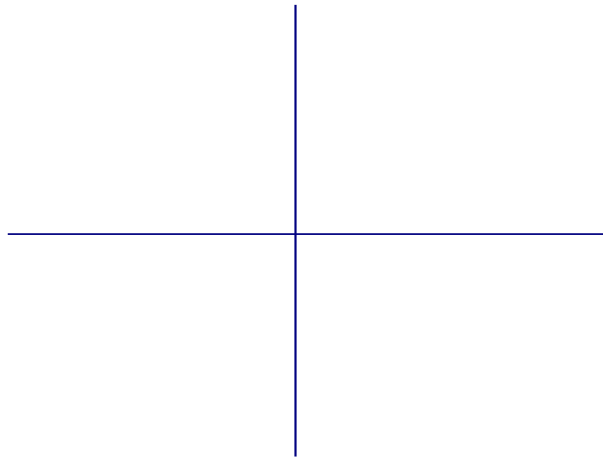
Y -Int:

End Behavior: Left=

Zeros:

End Behavior: Right=

Extreme Points:



7. Find the zeros and Domain of $y = -3x\sqrt{36 - x^2}$. Show the supporting algebraic work.

8. Find the critical values and extreme values of $y = -3x\sqrt{36 - x^2}$. Show the derivative and algebra to support the critical values.

9. Find the traits and **sketch** of $y = -3x\sqrt{36 - x^2}$.

Domain:

Range:

Y – Int:

End Behavior: Left=

Zeros:

End Behavior: Right=

Extreme Points:

