

Name: _____

Natural Exponential & Logarithmic Functions

Exercise 1: Use your calculator to give the value of each of the following rounded to 5 decimal places.

1) $5e$

2) e^4

3) e^{-1}

4) $e^2 + e^{-2}$

5) $(e-1)^3$

6) $\frac{2}{e} + \frac{3}{e^2}$

Exercise 2: Find the domain of definition of the functions

1) $f(x) = \ln(x+9)$

2) $f(x) = \ln(-4-x)$

3) $f(x) = \ln(x+11)$

4) $f(x) = \ln(x-8)$

5) $f(x) = \ln(x-4)$

6) $f(x) = \ln(7x-8)$

7) $f(x) = \ln(4x+12)$

8) $f(x) = \ln(x+12)$

9) $f(x) = 4\ln(x-3) + \ln x$

10) $f(x) = \ln 5x + \ln(3)$

Exercise 3: Starting with the graph of $y = e^x$, sketch the graph of each of the following functions using a shift, reflection, stretch, or compression.

1) $y = e^x + 2$

2) $y = -e^x$

3) $y = e^{x+2}$

4) $y = e^{x/2}$

5) $y = e^{x-1}$

6) $y = e^{2x}$

7) $y = 2e^x$