SM3 Unit7 Review   Name:_____

Graph the function. State the domain, range, intervals of increase and decrease, intercepts, and end behavior (using limit notation).

1) $y = 3^x$
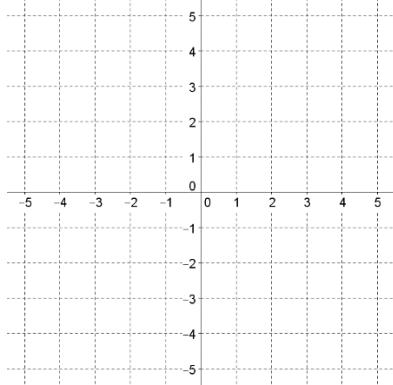
2) $y = -2^x + 1$
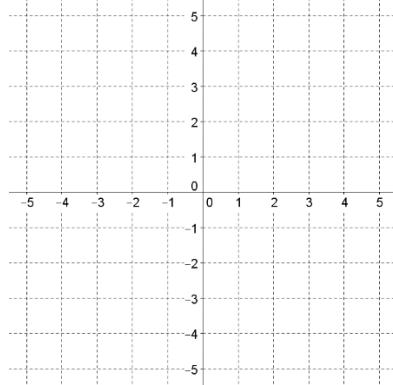
3) $y = e^{-x}$

D:	R:
Inc:	Dec:
x-int:	y-int:
EB:	

D:	R:
Inc:	Dec:
x-int:	y-int:
EB:	
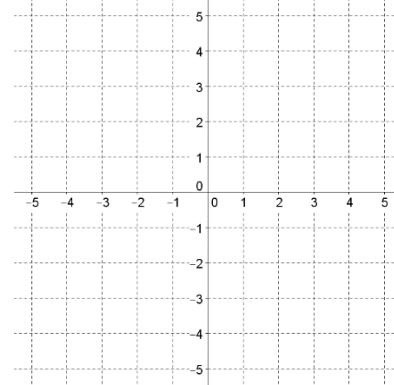
D:	R:
Inc:	Dec:
x-int:	y-int:
EB:	

4) $y = -\log_3(x)$
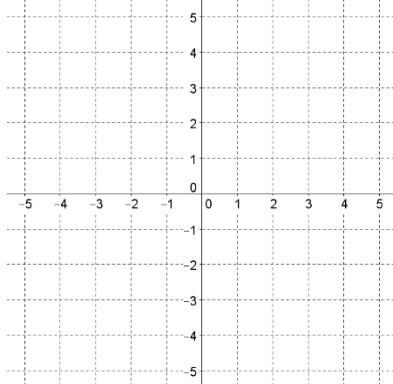
5) $y = \log_3(x - 2)$
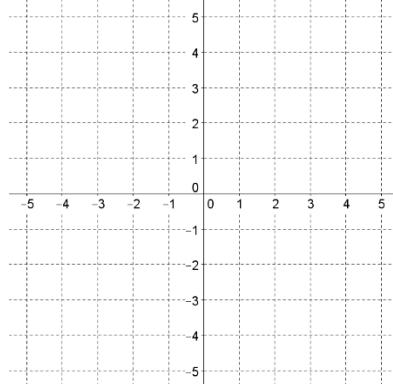
6) $y = \log_2(x + 1) - 2$

D:	R:
Inc:	Dec:
x-int:	y-int:
EB:	

D:	R:
Inc:	Dec:
x-int:	y-int:
EB:	
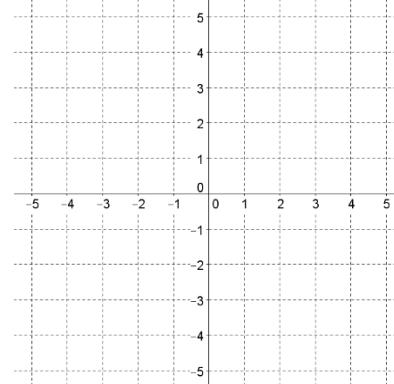
D:	R:
Inc:	Dec:
x-int:	y-int:
EB:	

Find the average rate of change on the given interval.

7) $y = 3(2^x)$ on $[1,3]$ 8) $y = 3^{-x} + 1$ on $[0,2]$ 9) $y = \log_2(x+2)$ on $[6,30]$

Evaluate the expressions

10) $\log_5 125$ 11) $\log_8 1$ 12) $\log_{11} 11^{-3}$ 13) $\log_6 \dfrac{1}{216}$

Expand the logarithmic expressions.

14) $\log_3[x(8-x)]$ 15) $\log_4 \dfrac{x^2}{x-11}$ 16) $\ln \sqrt[6]{2x-5}$

Rewrite (condense) the expression as a single logarithmic expression.

17) $\log_2 x + \log_2 7$ 18) $\log_7 x - \log_7(3x-4)$ 19) $\dfrac{1}{4}\log_7 x - \dfrac{3}{4}\log_7(x+2)$

Rewrite the expression using logarithmic expressions in base 10 and simplify if possible.

20) $\log_8 5$ 21) $\log_3 81$ 22) $\ln 6$