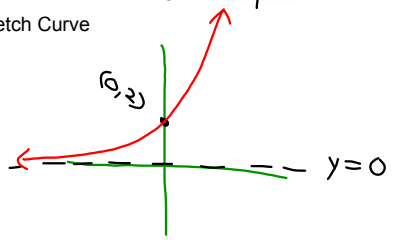
Math Studies
Exponential wksht

name_____

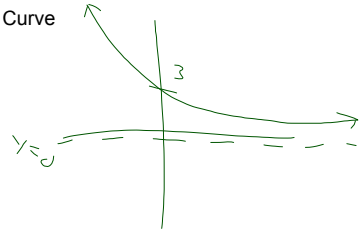
A) f(x) = $2(4)^x + 0$

1) Does f(x) represent exponential growth or decay? G
2) As x approaches infinity what does y approach? ∞
3) As x approaches (-) infinity what does y approach? 0
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $y > 0$ 6) Horiz. Asym: $y = 0$
7) Is (0,1) a point on the graph? N If not what is y-int (0,2)
8) Sketch Curve



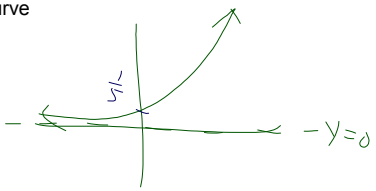
B) f(x) = $3 \cdot \left(\frac{1}{2}\right)^x$

1) Does f(x) represent exponential growth or decay? decay
2) As x approaches infinity what does y approach? 0
3) As x approaches (-) infinity what does y approach? ∞
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $(0, \infty)$
6) Is (0,1) a point on the graph? No If not what is y-int (0,3)
7) Sketch Curve



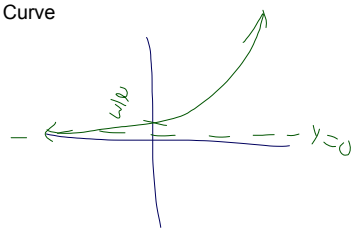
C) f(x) = $\frac{1}{3} \cdot 7^x$

1) Does f(x) represent exponential growth or decay? growth
2) As x approaches infinity what does y approach? ∞
3) As x approaches (-) infinity what does y approach? 0
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $(0, \infty)$
6) Is (0,1) a point on the graph? No If not what is y-int $(0, \frac{1}{3})$
7) Sketch Curve



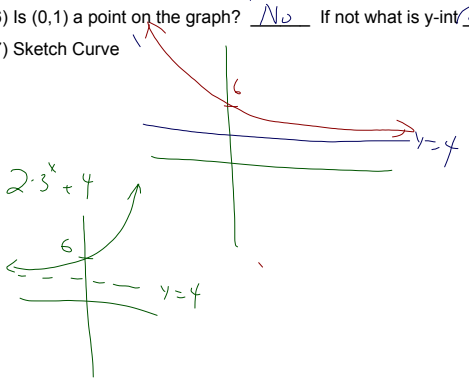
D) f(x) = $\frac{2}{3} \cdot \left(\frac{1}{4}\right)^{-x}$

1) Does f(x) represent exponential growth or decay? growth
2) As x approaches infinity what does y approach? ∞
3) As x approaches (-) infinity what does y approach? 0
4) Identify the domain of f(x): $\mathbb{R}$ H.A. = $y = 0$
5) Identify the range of f(x): $(0, \infty)$
6) Is (0,1) a point on the graph? No If not what is y-int $(0, \frac{2}{3})$
7) Sketch Curve



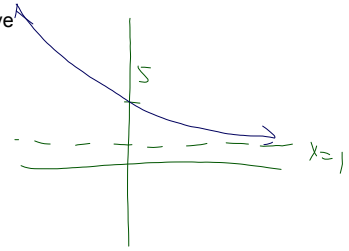
E) f(x) = $2(3)^{-x} + 4$

1) Does f(x) represent exponential growth or decay? decay
2) As x approaches infinity what does y approach? 4
3) As x approaches (-) infinity what does y approach? ∞
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $(4, \infty)$
6) Is (0,1) a point on the graph? No If not what is y-int (0,6)
7) Sketch Curve



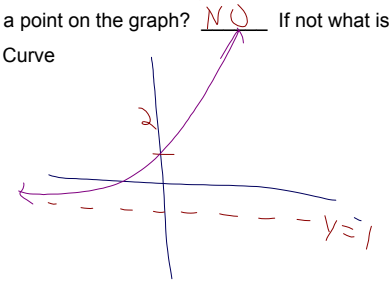
F) f(x) = $4\left(\frac{1}{5}\right)^x + 1$

1) Does f(x) represent exponential growth or decay? decay
2) As x approaches infinity what does y approach? 1
3) As x approaches (-) infinity what does y approach? ∞
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $(1, \infty)$
6) Is (0,1) a point on the graph? No If not what is y-int (0,5)
7) Sketch Curve



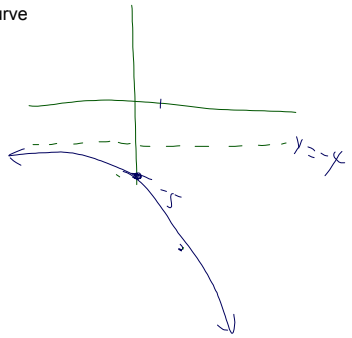
G) f(x) = $3 \cdot 5^x - 1$

1) Does f(x) represent exponential growth or decay? _____
2) As x approaches infinity what does y approach? ∞
3) As x approaches (-) infinity what does y approach? -1
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $(-1, \infty)$
6) Is (0,1) a point on the graph? NO If not what is y-int 2
7) Sketch Curve



H) f(x) = $-(7)^x - 4$

1) Does f(x) represent exponential growth or decay? _____
2) As x approaches infinity what does y approach? $-\infty$
3) As x approaches (-) infinity what does y approach? -4
4) Identify the domain of f(x): $\mathbb{R}$
5) Identify the range of f(x): $(-\infty, -4)$
6) Is (0,1) a point on the graph? N If not what is y-int (0,-5)
7) Sketch Curve



$4^x + 6 = 20$

$4^x = 14$

$x \ln 4 = \ln 14$

$x = \frac{\ln 14}{\ln 4}$

$6 \cdot 2^x - 8 = 7$

$6 \cdot 2^x = 15$

$2^x = \frac{15}{6}$

$x \log 2 = \log \frac{15}{6}$

$x = \frac{\log \frac{15}{6}}{\log 2}$

$y = 4 \cdot \left(\frac{5}{5}\right)^{-x} + c$

$y = k a^x + c$

$y = c$