

Math 151 - Quiz 9

April 27, 2016

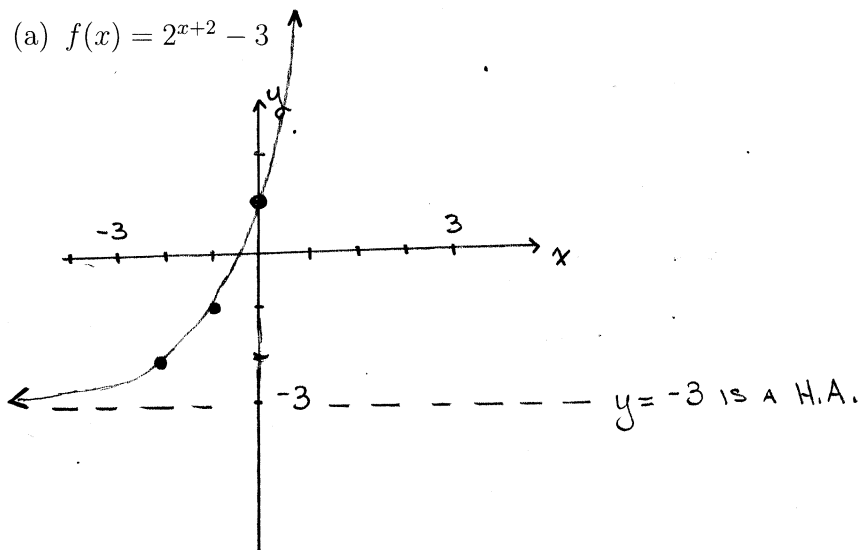
Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

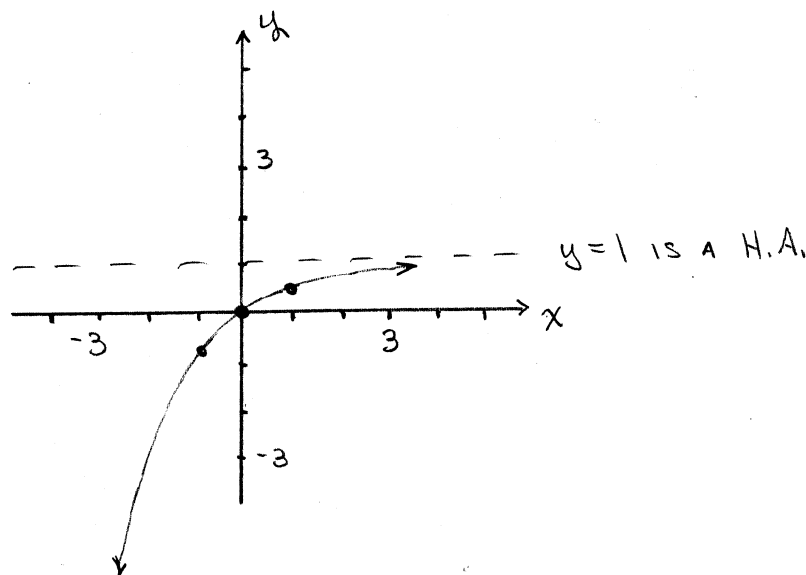
1. (5 points) Sketch the graph of each function. Label any horizontal asymptotes.

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



x	f(x)
0	1
-2	-2
-1	-1

(b) $g(x) = -\left(\frac{2}{3}\right)^x + 1$



x	g(x)
0	0
1	$1 - \frac{2}{3} = \frac{1}{3}$
-1	$-\frac{3}{2} + 1 = -\frac{1}{2}$

Over →

2. (5 points) Solve each equation.

(a) $8^{2x} = 2^{x+8}$

$$(2^3)^{2x} = 2^{x+8}$$

$$6x = x + 8$$

$$5x = 8$$

$$x = \frac{8}{5}$$

(b) $9^{x+1} - 27^{5x-1} = 0$

$$(3^2)^{x+1} = (3^3)^{5x-1}$$

$$2(x+1) = 3(5x-1)$$

$$2x + 2 = 15x - 3$$

$$5 = 13x$$

$$\frac{5}{13} = x$$