

Precalc Warm Up – 9/29/10

Name: _____ Period: _____

1) Evaluate the following expressions:

a. $4^{-2} =$

b. $12^{-1} =$

c. $3^2 + 5 =$

d. $3^{-2} + 4 =$

e. $\left(\frac{1}{2}\right)^{-1} + 8 =$

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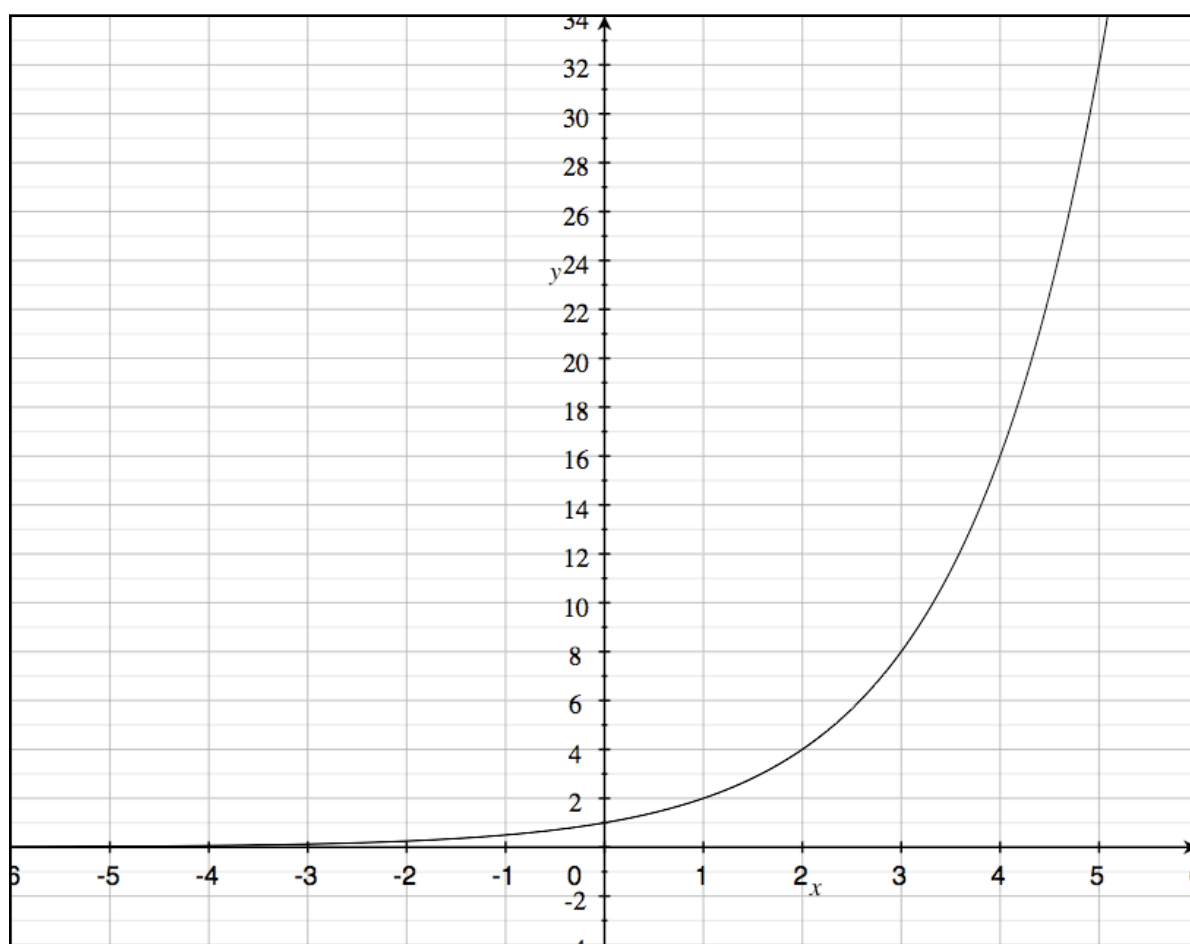
Precalc Finding Asymptotes

CONCEPT BUILDER

Name: _____ Date: _____ Period: _____

Students will be able to determine the asymptote of an exponential function given its graph or its equation.

Yesterday we graphed the function $f(x) = 2^x$



End Behavior:

Asymptote:

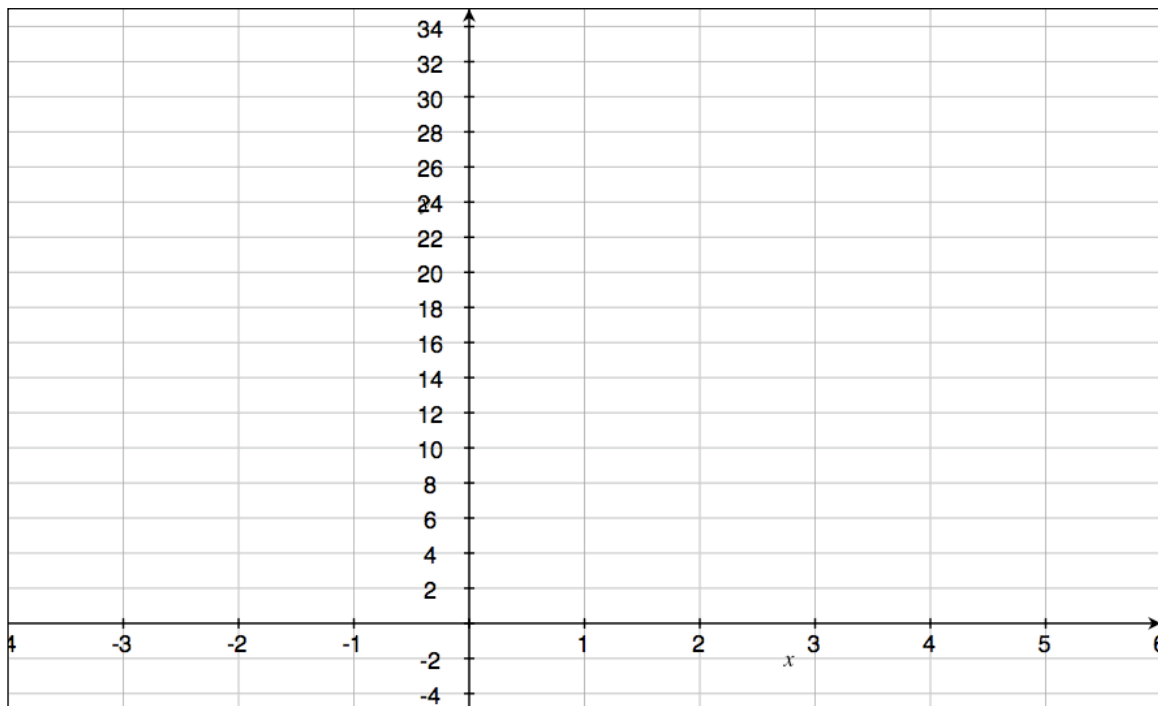
Can we change the equation so that we get a different asymptote or will exponential functions always approach 0?

The generic function for an exponential function is $f(x) = a(b^{kx}) + c$

Remember that yesterday we graphed the exponential functions:

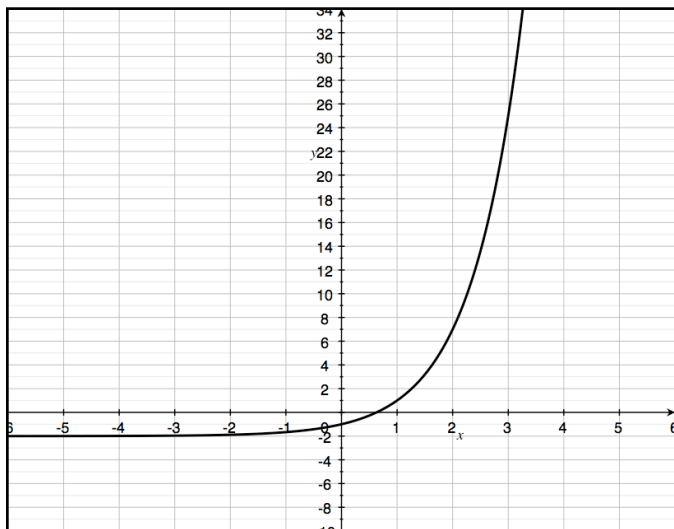
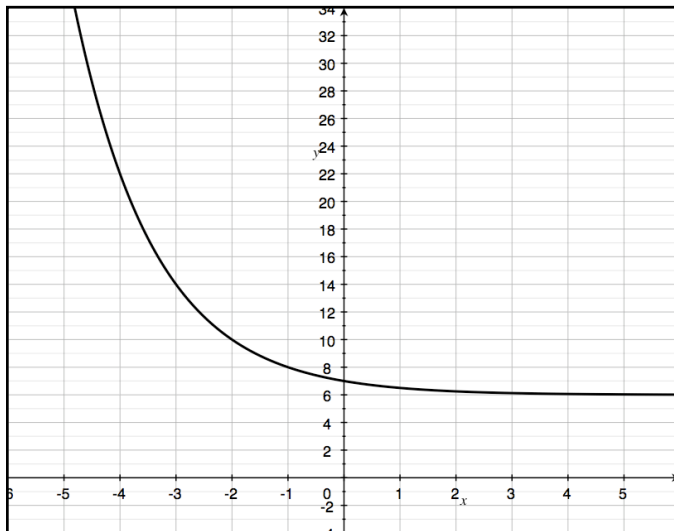
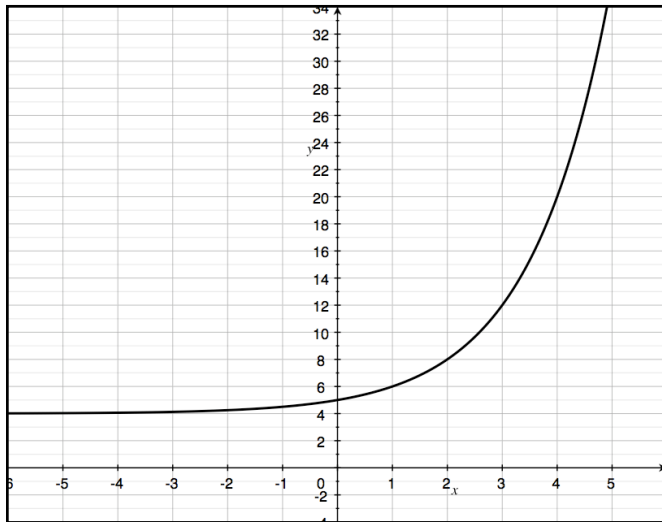
$$f(x) = 2^x \text{ and } f(x) = 3^x \text{ and } f(x) = 2(3^x)$$

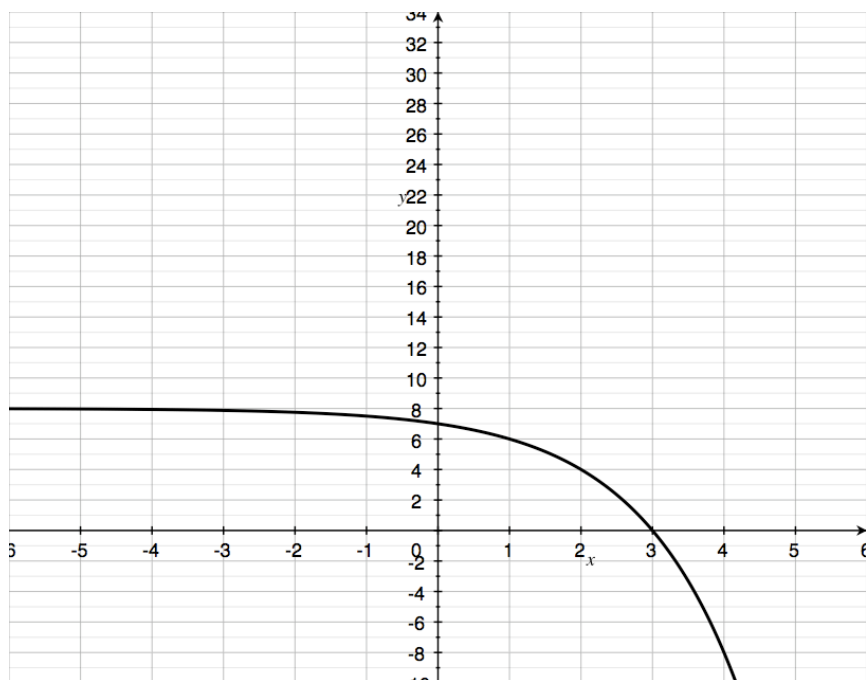
Now, let's try something different. Consider the function $f(x) = 2^x$ graph two new functions one with a value of k of your choice and one with a value of d of your choice. Graph both of your new functions on the axes below. Which one changed the asymptote?



To identify the asymptote for an exponential function:

Practice – Identify any asymptotes for the following graphs





State any asymptotes for the following functions

1) $f(x) = 2^x + 5$

2) $f(x) = 2^x - 3$

3) $f(x) = 0.5^x + 2$

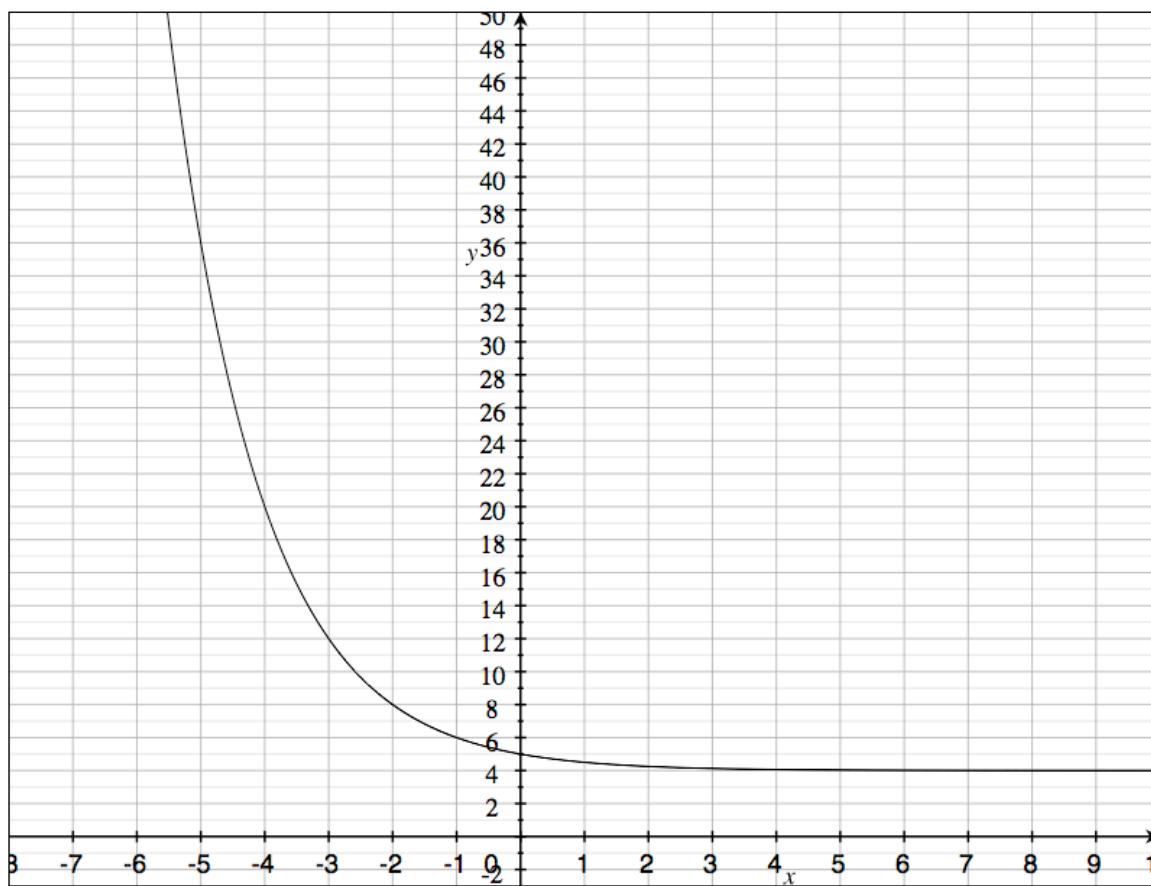
4) $f(x) = -(2^x) + 8$

Precalc – Exit Slip – 9/29/10

Name: _____

Block: _____

- 1) Identify any horizontal asymptotes for $f(x)$ from the graph below.



- 2) Identify any horizontal asymptotes for $f(x) = 3^x - 4$