

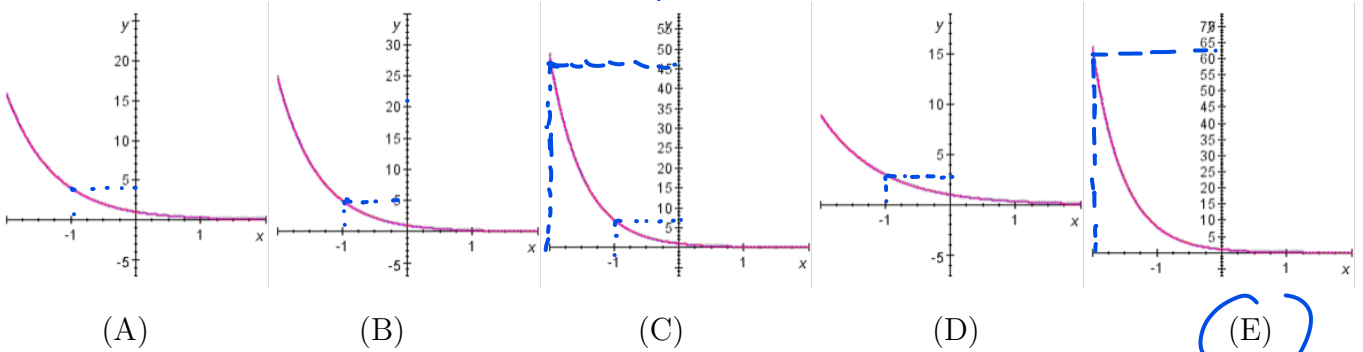
Your Name:

Solutions

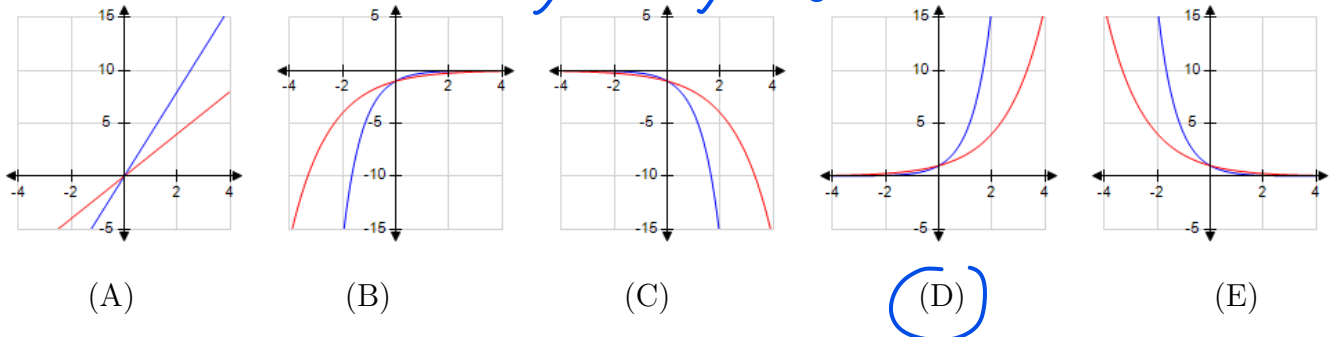
ID #:

Worksheet: Graphs of exponential functions

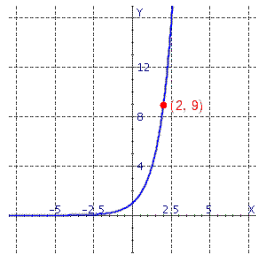
1. Select the graph for the function $f(x) = (\frac{1}{8})^x$ *passes (0, 1), (-1, 8), (-2, 64)*



2. Identify the graphs of the functions $y = 2^x$ and $y = 4^x$ *Ranges for both (0, +∞)*



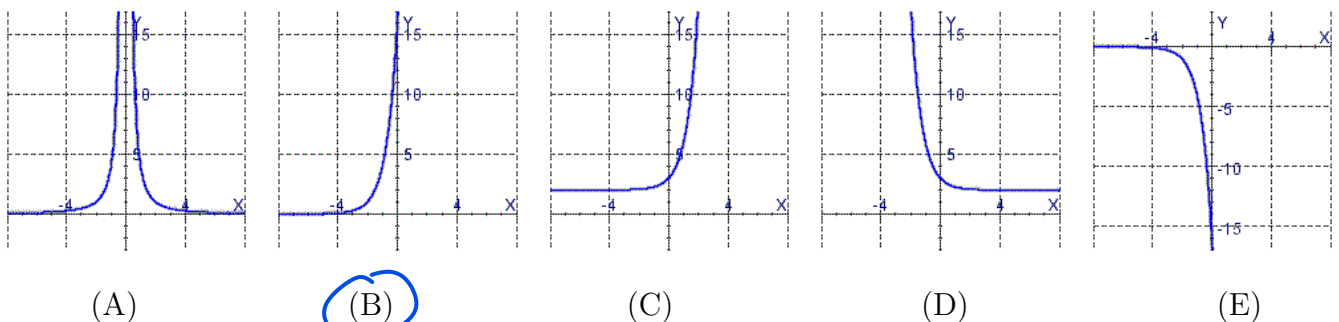
3. Find the exponential function $f(x) = a^x$ whose graph is given.



- (A) $f(x) = 3^x$
 B. $f(x) = 3^{x+3}$
 C. $f(x) = -3^x$
 D. $f(x) = 3^{-x}$
 E. $f(x) = x^3$

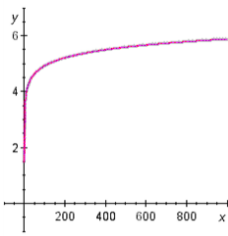
4. Determine the graph of the function $y = 4^{x+2}$

4^x shift left 2 units $\rightarrow 4^{x+2}$



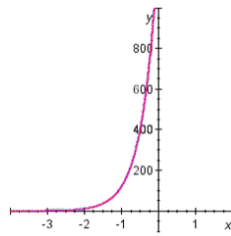
5. Determine the graph of the function $f(x) = 11^{x+3}$

11^x shift left 3 units $\rightarrow 11^{x+3}$



Domain: $(-\infty, \infty)$
Range: $(0, \infty)$
Asymptote: $y = 0$

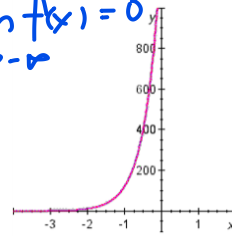
(A)



Domain: $(-\infty, \infty)$
Range: $(0, \infty)$
Asymptote: $x = 0$

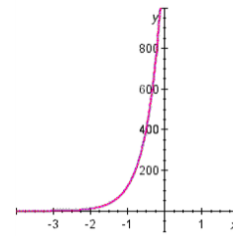
(B)

$\lim_{x \rightarrow -\infty} f(x) = 0$



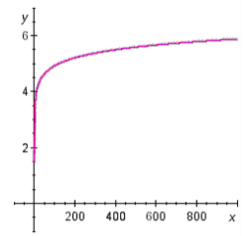
Domain: $(-\infty, \infty)$
Range: $(0, \infty)$
Asymptote: $y = 0$

(C)



Domain: $(0, \infty)$
Range: $(-\infty, \infty)$
Asymptote: $y = 0$

(D)

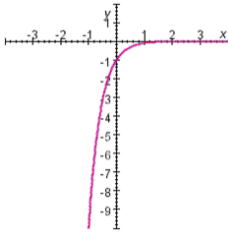


Domain: $(0, \infty)$
Range: $(-\infty, \infty)$
Asymptote: $y = 0$

(E)

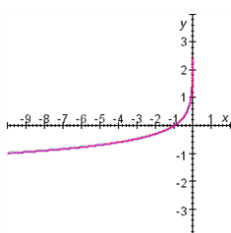
6. Determine the graph of the function $f(x) = -(\frac{1}{10})^x$

$(\frac{1}{10})^x$ reflect about x-axis $\rightarrow -(\frac{1}{10})^x$



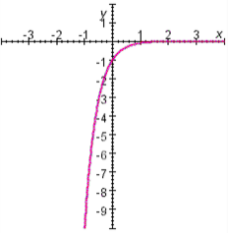
Domain: $(-\infty, \infty)$
Range: $(-\infty, 0)$
Asymptote: $x = 0$

(A)



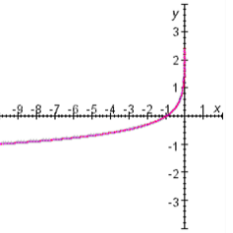
Domain: $(-\infty, 0)$
Range: $(-\infty, \infty)$
Asymptote: $x = 0$

(B)



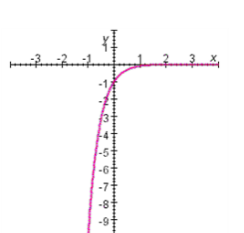
Domain: $(-\infty, 0)$
Range: $(-\infty, \infty)$
Asymptote: $x = 0$

(C)



Domain: $(-\infty, 0)$
Range: $(-\infty, \infty)$
Asymptote: $y = 0$

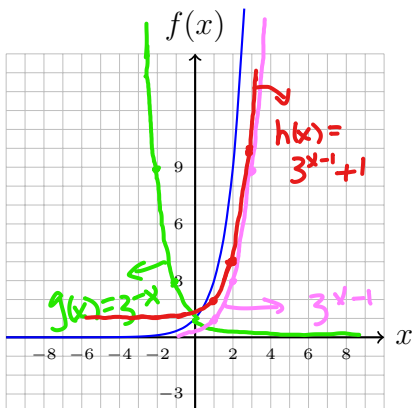
(D)



Domain: $(-\infty, \infty)$
Range: $(-\infty, 0)$
Asymptote: $y = 0$

(E)

7. Based on the given graph of $f(x) = 3^x$, graph $g(x) = 3^{-x}$ and $h(x) = 3^{x-1} + 1$



1) 3^x reflect about y-axis $\rightarrow 3^{-x}$: passes (0, 1), (-1, 3), (-2, 9)

2) 3^x shift right 1 unit $\rightarrow 3^{x-1}$: (1, 1), (2, 3), (3, 9)

3^{x-1} shift up 1 unit $\rightarrow 3^{x-1} + 1$: (1, 2), (2, 4), (3, 10)