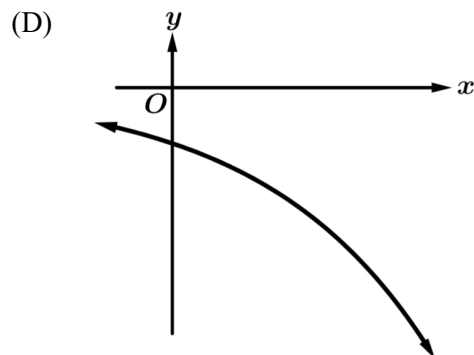
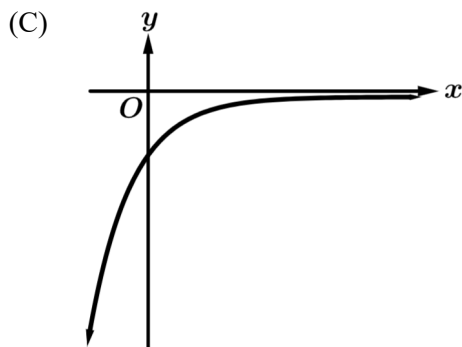
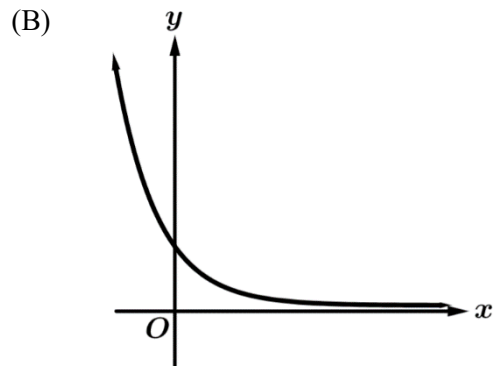
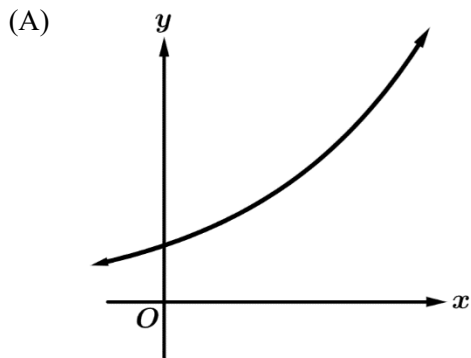
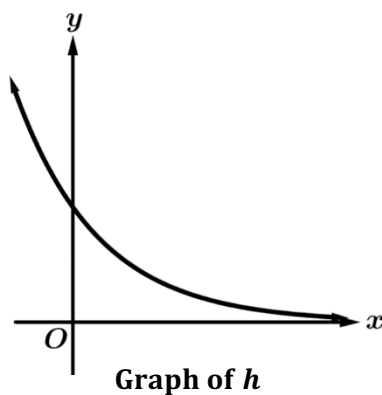


1. The graph of the exponential function f is shown above. Which of the following pairs of limit statements describing the end behavior of f is correct?

- (A) $\lim_{x \rightarrow -\infty} f(x) = -\infty$ and $\lim_{x \rightarrow \infty} f(x) = \infty$
- (B) $\lim_{x \rightarrow -\infty} f(x) = \infty$ and $\lim_{x \rightarrow \infty} f(x) = 0$
- (C) $\lim_{x \rightarrow -\infty} f(x) = 0$ and $\lim_{x \rightarrow \infty} f(x) = \infty$
- (D) $\lim_{x \rightarrow 0} f(x) = -\infty$ and $\lim_{x \rightarrow \infty} f(x) = \infty$

2. Let g be an exponential function that is increasing and concave down. Which of the following could be the graph of g ?





3. The graph of the exponential function h is shown above. Which of the following could be the expression for h ?

- (A) $h(x) = -2\left(\frac{2}{3}\right)^x$ (B) $h(x) = -\frac{2}{3}(2)^x$ (C) $h(x) = \frac{2}{3}(2)^x$ (D) $h(x) = 2\left(\frac{2}{3}\right)^x$

4. Let $f(x) = 3^x$. Which of the following statements about the graph of f is correct?

- (A) f is increasing at an increasing rate.
 (B) f is increasing at a decreasing rate.
 (C) f is decreasing at an increasing rate.
 (D) f is decreasing at a decreasing rate.

5. Let $g(x) = -2(5)^x$. Which of the following statements about the graph of g is correct?

- (A) g is increasing at an increasing rate.
 (B) g is increasing at a decreasing rate.
 (C) g is decreasing at an increasing rate.
 (D) g is decreasing at a decreasing rate.

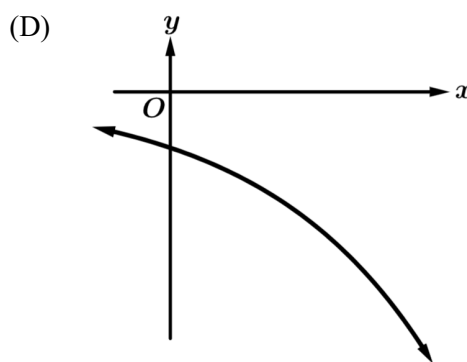
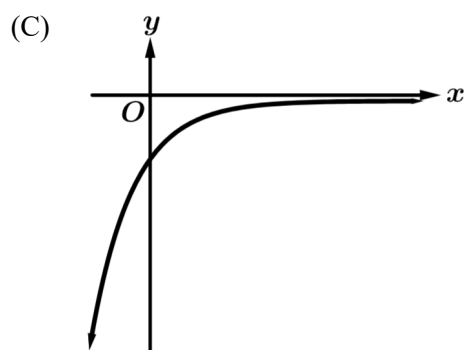
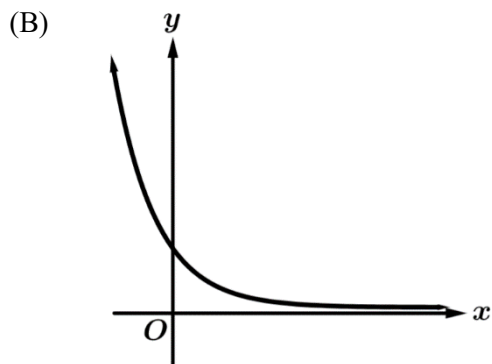
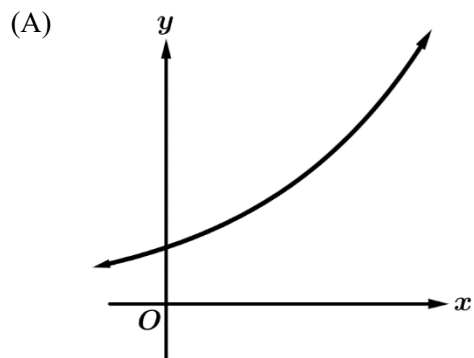
6. The exponential function k exhibits exponential decay. Which of the following could be k ?

- (A) $k(x) = 4\left(\frac{2}{3}\right)^x$ (B) $k(x) = \frac{2}{3}(4)^x$ (C) $k(x) = -4x^2$ (D) $k(x) = -\frac{1}{2}x^2$

7. The graph of the exponential function f has the following end behaviors:

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

Which of the following could be the graph of f ?



8. The graph of the exponential function g has the following end behaviors:

$$\lim_{x \rightarrow -\infty} g(x) = 0 \text{ and } \lim_{x \rightarrow \infty} g(x) = -\infty$$

Which of the following could be an equation for g ?

- (A) $g(x) = -3\left(\frac{1}{2}\right)^x$ (B) $g(x) = -\frac{1}{2}(3)^x$ (C) $g(x) = 3\left(\frac{1}{2}\right)^x$ (D) $g(x) = \frac{1}{2}(3)^x$

9. Let h be an exponential function defined by $h(x) = 5\left(\frac{\pi}{3}\right)^x$. Which of the following statement pairs is correct?

- (A) h is increasing and the graph of h is concave up.
 (B) h is increasing and the graph of h is concave down.
 (C) h is decreasing and the graph of h is concave up.
 (D) h is decreasing and the graph of h is concave down.