

Directions: Rewrite each of the following exponential functions in the equivalent general form $y = ab^x$, where a and b are positive constants.

1. $f(x) = 7^{x+2}$

2. $g(x) = 5^{x-1}$

3. $h(x) = 2^{x+3}$

4. $k(x) = 3^{x-3}$

5. $p(x) = 2(4)^{x-1}$

6. $m(x) = 3^{2x}$

7. $r(x) = 4^{x/2}$

8. $n(x) = 8^{x/3}$

9. $s(x) = 5(2)^{3x}$

10. Which of the following functions is an equivalent form of the function $f(x) = 4 \cdot 36^x$?

(A) $f(x) = 2 \cdot 6^{(x/2)}$

(B) $f(x) = 2 \cdot 6^{(2x)}$

(C) $f(x) = 4 \cdot 6^{(x/2)}$

(D) $f(x) = 4 \cdot 6^{(2x)}$

11. Which of the following functions is an equivalent form of the function $g(x) = 5 \cdot 3^{2x}$?

(A) $g(x) = 45^x$

(B) $g(x) = 5 \cdot 9^x$

(C) $g(x) = 25 \cdot 3^x$

(D) $g(x) = 25 \cdot 9^x$

12. The function h is given by $h(x) = 9 \cdot 4^{(x/2)}$. Which of the following is an equivalent form for $h(x)$?

(A) $h(x) = 6 \cdot 2^x$

(B) $h(x) = 9 \cdot 2^x$

(C) $h(x) = 18 \cdot 2^x$

(D) $h(x) = 9 \cdot 16^x$

13. The function k is given by $k(x) = a^2 \cdot 4^x$, where a is a positive constant. Which of the following is an equivalent form for $k(x)$?

(A) $k(x) = a \cdot 2^{(x/2)}$

(B) $k(x) = a^2 \cdot 2^{(x/2)}$

(C) $k(x) = a \cdot 16^{(x/2)}$

(D) $k(x) = a^2 \cdot 16^{(x/2)}$

14. Which of the following functions is an equivalent form of the function $p(x) = 3^{-2x}$?

(A) $p(x) = -(9)^x$

(B) $p(x) = (-9)^x$

(C) $p(x) = -\left(\frac{1}{9}\right)^x$

(D) $p(x) = \left(\frac{1}{9}\right)^x$

15. The function m is given by $m(x) = 8 \cdot 9^{(x/3)}$. Which of the following is an equivalent form for $m(x)$?

(A) $m(x) = 2 \cdot 3^x$

(B) $m(x) = 2 \cdot \left(\sqrt[3]{9}\right)^x$

(C) $m(x) = 8 \cdot 3^x$

(D) $m(x) = 8 \cdot \left(\sqrt[3]{9}\right)^x$