

Exponents/Logs Review 73

1) Which of the following is an exponential function?

- a) $y = x^3$ b) $x = y^3$ c) $y = 3^x$ d) $x = 3^y$

2) Which of the following is an exponential function?

- a) $y = (-2)^x$ b) $y = 2^x$ c) $y = 1^x$ d) $x = 2^y$

3) Which of the following is a logarithmic function?

- a) $y = \log_x 5$ b) $y = \log_5 x$ c) $x = \log_5 y$ d) $5 = \log_x y$

4) Which of the following is a logarithmic function?

- a) $y = \log_2 x$ b) $y = \log_1 x$ c) $y = \log_0 x$ d) $y = \log_{-1} x$

5) Which of the following is equivalent to: $y = 3^x$?

- a) $x = \log_y 3$ b) $x = \log_3 y$ c) $y = \log_x 3$ d) $y = \log_3 x$

6) Which of the following is equivalent to: $\log_a b = x$?

- a) $a^x = b$ b) $a^b = c$ c) $b^a = c$ d) $a^b = c$

7) Which of the following is equal to: $\log_4 16$?

- a) 64 b) 12 c) 2 d) 4

8) Which of the following is equal to: $\log_2(1/8)$?

- a) $1/3$ b) $1/4$ c) 3 d) -3

9) Which of the following is equal to: $\log_2 2$?

- a) $1/2$ b) 4 c) 1 d) 0

10) If $\log_4 4096 = y$, then the value of y is:

- a) 6 b) 64 c) 512 d) 1024

- a) 1 b) 2 c) 3 d) 4

20) Which of the following is equivalent to 4 ?

- a) $0.5\log_2 8$ b) $\log_2 \sqrt{256}$ c) $\log_2 \sqrt{64}$ d) $\log_3 \sqrt{81}$

21) Which of the following is the equivalent to $\log_a 2x + 3\log_a x$?

- a) $4\log_a(3x)$ b) $3\log_a(2x^2)$ c) $\log_a(2x^4)$ d) $\log_a(5x)$

22) Which of the following is equivalent to $2(\log_a x + \log_a y)$?

- a) $2\log_a(x + y)$ b) $\log_a(x^2 + y^2)$

- c) $\log_a 2x + \log_a 2y$ d) $\log_a(xy)^2$

23) Which of the following is equivalent to $\log_a(xy/3)$?

- a) $\log_a x + \log_a y + \log_a 3$ b) $\log_a x + \log_a y - \log_a 3$

- c) $3\log_a x + 3\log_a y$ d) $\log_a(x/3) + \log_a(y/3)$

24) Which of the following is approximately equal to $\log(0.0089)$?

- a) $-3 + 0.9494$ b) $-2 + 0.9494$ c) $-1 + 0.9494$ d) $3 + 0.9494$

25) Which of the following is approximately equal to $\log(57.6)$?

- a) $-1 + 0.7604$ b) $0 + 0.07604$ c) $1 + 0.7604$ d) $2 + 0.7604$

26) Solve : $2^{x-3} = 4$

- a) $x = 5$ b) $x = 4$ c) $x = 3$ d) $x = 2$

27) Solve : $8^{4x} = 4^{3x+3}$

- a) $x = 1$ b) $x = 2$ c) $x = 3$ d) $x = 4$

28) Solve : $4^{2k} \times 8^k = 2^{21}$

- a) $k = 1$ b) $k = 3$ c) $k = 5$ d) $k = 7$

29) Which of the following is equivalent to $5^x = 12$?

- a) $x = \log 12 - \log 5$ b) $x = \log 5 - \log 12$
c) $x = \log 5 / \log 12$ d) $x = \log 12 / \log 5$

30) Which of the following is equivalent to $\log_{12}42$?

- a) $\log 42 / \log 12$ b) $\log 42 \times \log 12$
c) $\log 42 - \log 12$ d) $\log 42 + \log 12$

31) The inverse of $y = 3^x$ is:

- a) $x = 3^y$ b) $3 = x^y$ c) $y = x^3$ d) $x = y^3$

32) The inverse of $y = 4^x$ is:

- a) $\log_4 y = x$ b) $\log_4 x = y$ c) $\log_x 4 = y$ d) $\log_y 4 = x$

Answers: 1) c, 2) b, 3) b, 4) a, 5) b, 6) a, 7) c, 8) d, 9) c, 10) a, 11) a, 12) a, 13) b, 14) d, 15) a, 16) c, 17) a, 18) c, 19) a, 20) b, 21) c, 22) d, 23) b, 24) a, 25) c, 26) a, 27) a, 28) b, 29) d, 30) a, 31) a, 32) b.