

College Algebra – Logarithms

1. 49. In the real numbers, what is the solution of the equation $8^{2x+1} = 4^{1-x}$?
- A. $-\frac{1}{3}$
B. $-\frac{1}{4}$
C. $-\frac{1}{8}$
D. 0
E. $\frac{1}{7}$
2. 55. For what real value of b is the statement $\log_b 9 = 0.5$ true?
- A. 2
B. 3
C. 4.5
D. 18
E. 81
3. 60. What is the real value of x in the equation $\log_2 24 - \log_2 3 = \log_5 x$?
- F. 3
G. 21
H. 72
J. 125
K. 243
4. 49. What is the value of $\log_2 8$?
- A. 3
B. 4
C. 6
D. 10
E. 16

5. 26. If, for all x , $(x^{2a-1})^3 = x^9$, then $a = ?$

F. 1

G. $\frac{7}{5}$

H. $\frac{5}{3}$

J. 2

K. $\frac{12}{5}$

6. 56. Whenever w is an integer greater than 1, $\log_w \frac{w^2}{w^6} = ?$

F. -4

G. -3

H. $-\frac{1}{3}$

J. $\frac{1}{3}$

K. 3

7. 49. The value of $\log_5\left(5^{\frac{13}{2}}\right)$ is between which of the following pairs of consecutive integers?

A. 0 and 1

B. 4 and 5

C. 5 and 6

D. 6 and 7

E. 9 and 10

8. 29. Which of the following is a value of x that satisfies $\log_x 36 = 2$?
- A. 4
 - B. 6
 - C. 8
 - D. 16
 - E. 18

9. 59. If $\log_a x = s$ and $\log_a y = t$, then $\log_a (xy)^2 = ?$
- A. $2(s + t)$
 - B. $s + t$
 - C. $4st$
 - D. $2st$
 - E. st

10. 34. If $a = b + 2$, then $(b - a)^4 = ?$
- F. -16
 - G. -8
 - H. 1
 - J. 8
 - K. 16