

PreCalc BC**Exponents and Logs****Name:**

1. What is the value of $\sum_{j=3}^5 \ln(j)$?

- a) 1.6 b) 4.8 c) 7.8
d) 4.1 e) 1.9

2. If $x^5 y^8 z^{-3} = \frac{8x^4}{y^{-8} z^3}$, then $x =$

- a) $\frac{1}{8}$ b) $\frac{1}{4}$ c) $8y^2 z^2$
d) 8 e) $8y^{16} z^6$

3. If $16^x = 4$ and $5^{x+y} = 625$, then $y =$

- a) 2 b) 5 c) $\frac{25}{2}$ d) $\frac{7}{2}$ e) 1

4. If $\log_5(x-3) = \log_{25}(x-1)$ which of the following could be the value of x ?

- a) 12 b) 2 c) 8 d) 5 e) 10

5. If $f(x) = 2^x + 1$, then $f^{-1}(7) =$

- a) 2.8 b) 3 c) 3.6 d) 2.4 e) 2.6

6. If $4.05^p = 5.25^q$, what is the value of $\frac{p}{q}$

- a) -0.11 b) 0.11 c) 1.30
d) 1.19 e) 1.67

7. If $\log_b A = 0.2222$ and $\log_b B = 0.3333$, then the value of $\log_b(\sqrt{A} \cdot B^2)$ is

- a) 0.0741 b) 0.1111 c) 0.5555
d) 0.7777 e) 0.9999

8. If $7^{x-1} = 6^x$, find x .

- a) 0.08 b) -13.2 c) 0.22
d) 12.6 e) 0.52

9. If $(\log_3 x)(\log_5 3) = 3$, find x .

- a) 5 b) 25 c) 125 d) 81 e) 9

10. If $f(x) = x \log x$ and $g(x) = 10^x$, then $g(f(2)) =$

- a) 24 b) 17 c) 4 d) 2 e) 0.6

11. If $f(x) = 2^x$, then $f(\log_5 2) =$

- a) 5 b) 2.32 c) 0.43
d) 0.19 e) 1.35

12. $\text{Log}_x 2 = \log_3 x$ is satisfied by two values of x . Their sum equals

- a) 0 b) 1.73 c) 2.35
d) 2.81 e) 3.14

13. The graph of $y = \log_5 x$ and $y = \ln 0.5x$ intersect at a point where x equals

- a) 6.24 b) 1.14 c) 1.69
d) 1.05 e) 5.44

14. If $f(ab) = f(a) + f(b)$ for all real numbers in the domain of f , $f(x)$ equals which of these?

- I. $1/x$ II. e^x III. $\log x$

- a) I only b) II only c) III only
d) I and II e) II and III