EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Logarithms

Grade : ICSE Grade IX

1. If $log_6 x = a$ and $log_6 y = b$, then $6^{(a+b)} =$

   (i) ax (ii) xy (iii) yb (iv) 6 (v) ab

2. $log_{6561} 59049 =$

   (i) 2.25 (ii) 9.25 (iii) 3.25 (iv) 0.25 (v) 1.25

3. If $log\,2 = 0.3010, log\,3 = 0.4771, log\,5 = 0.6989, log\,7 = 0.8451,$ the value of $log_{216^6} 432^{14}$ is

   (i) 4.6342 (ii) 0.6342 (iii) 2.6342 (iv) 3.6342 (v) 1.6342

4. The logarithmic notation of $4^3 = 64$ is

   (i) $log_4 63 = 3$ (ii) $log_4 64^2 = 3$ (iii) $log_4 64 = 3$ (iv) $log_4 66 = 3$ (v) $log_1 61 = 3$

5. $log\,96^4 - log\,96^8 =$

   (i) $log\,96^{-3}$ (ii) $log\,93^{-4}$ (iii) $log\,96^{-4}$ (iv) $log\,99^{-4}$ (v) $log\,96^{-5}$

6. Find the value of x if $log_x 81 = 4$

   (i) 2 (ii) 3 (iii) 5 (iv) 4 (v) 0

7. $log_3 \frac{27}{28} =$

   (i) $log\frac{27}{28} - log\,3$ (ii) $log\frac{27}{28} \times log\,3$ (iii) $log\frac{27}{28} \div log\,3$ (iv) $log\frac{27}{28} + log\,3$ (v) $log\,3 \div log\frac{27}{28}$

8. Express $log\ p^2q^3$ in terms of $log\,p$ and $log\,q$

   (i) $2log\,p - 3log\,q$ (ii) $\frac{\frac{2}{3}log\,p}{log\,q}$ (iii) $3log\,q - 2log\,p$ (iv) $2log\,p + 3log\,q$

9. If $(x^4 + y^4) = z^4$, then which of the following is true?

   (i) $log_x(z^2 - y^2) - log_x(z^2 + y^2) = 4$ (ii) $log_x(z^2 - y^2) + log_x(z^2 + y^2) = 6$ (iii) $log_x(z^2 - y^2) + log_x(z^2 + y^2) = 4$

   (iv) $\frac{log(z^2 - y^2)}{log(z^2 + y^2)} = 5$ (v) $log_x(z^2 - y^2) + log_x(z^2 + y^2) = 7$

10. $log\,5^{10} - log\,5^{9} =$

(i) $log\,5^{2}$ (ii) $log\,4$ (iii) $log\,2$ (iv) $log\,7$ (v) $log\,5$

11. If $log_{7} x = p$ and $log_{7} y = q$, then $\frac{x}{y} =$

(i) 7^{pq} (ii) $7^{(p-q)}$ (iii) 7^{2pq} (iv) $7^{(p+q)}$

12. If $x = 1 + log_{c} ab$; $y = 1 + log_{a} bc$; $z = 1 + log_{b} ac$,
then which of the following is true?

(i) $(xy - xz - yz) = xyz$ (ii) $(xy + xz + yz) = xyz$ (iii) $(xy + xz - yz) = xyz$ (iv) $(xy - xz + yz) = xyz$

(v) $(x + y + z) = xyz$

13. $log\,0.5231 + log\,0.6667 =$

(i) $log\,0.3487$ (ii) $log\,1.3487$ (iii) $log\,8.3487$ (iv) $log\,7.3487$ (v) $log\,2.3487$

14. $log\,72 + log\,36 =$

(i) $log\,2592$ (ii) $log\,2592^{2}$ (iii) $log\,2590$ (iv) $log\,2591$ (v) $log\,2595$

15. Find the value of x if $log_{x} \frac{1}{27} = -3$

(i) 5 (ii) 4 (iii) 0 (iv) 2 (v) 3

16. $log\,98.0800 + log\,9.7500 =$

(i) $log\,956.2800$ (ii) $log\,954.2800$ (iii) $log\,955.2800$ (iv) $log\,957.2800$ (v) $log\,958.2800$

17. $log_{10000} 1000 =$

(i) 0.75 (ii) 7.75 (iii) 2.75 (iv) 1.75 (v) 8.75

18. The base of $log_{4} \frac{3}{11}$ is

(i) $\frac{3}{11}$ (ii) 3 (iii) 2 (iv) 4 (v) 6

19. If $log\,2 = 0.3010, log\,3 = 0.4771, log\,5 = 0.6989, log\,7 = 0.8451$,
the value of $log\,448^{64}$ is

(i) 168.6704 (ii) 169.6704 (iii) 167.6704 (iv) 170.6704 (v) 171.6704

20. $log\,78^{9} + log\,78^{9} =$

(i) $log\,76^{18}$ (ii) $log\,78^{19}$ (iii) $log\,78^{18}$ (iv) $log\,81^{18}$ (v) $log\,78^{17}$

21. $log\,4.0000 + log\,9.0000 =$

(i) $log\,38.0000$ (ii) $log\,37.0000$ (iii) $log\,36.0000$ (iv) $log\,34.0000$ (v) $log\,35.0000$

22. $log\,0.6250 - log\,0.3333 =$

(i) $log\,0.8750$ (ii) $log\,1.8750$ (iii) $log\,2.8750$ (iv) $log\,9.8750$ (v) $log\,3.8750$

23. If $log_7 x = a$ and $log_7 y = b$, then $7^{(a-b)} =$

(i) $\frac{x}{b}$ (ii) $\frac{x}{y}$ (iii) $\frac{a}{y}$ (iv) $\frac{a}{b}$ (v) $\frac{y}{x}$

24. $log\,98^5 + log\,98^{10} =$

(i) $log\,98^{15}$ (ii) $log\,98^{16}$ (iii) $log\,95^{15}$ (iv) $log\,98^{14}$ (v) $log\,100^{15}$

25. $log_{3^{10}} 61^6 =$

(i) $\frac{3}{5} log_3 60$ (ii) $\frac{3}{5} log_3 61$ (iii) $\frac{6}{5} log_3 61$ (iv) $\frac{3}{5} log_{3^{-1}} 59$ (v) $\frac{3}{5} log_3 64$

Assignment Key

1) (ii)	2) (v)	3) (iii)	4) (iii)	5) (iii)	6) (ii)
7) (iii)	8) (iv)	9) (iii)	10) (v)	11) (ii)	12) (ii)
13) (i)	14) (i)	15) (v)	16) (i)	17) (i)	18) (iv)
19) (ii)	20) (iii)	21) (iii)	22) (ii)	23) (ii)	24) (i)
25) (ii)					