EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Logarithms

Grade : ICSE Grade IX

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1. If $log_7 x = a$ and $log_7 y = b$, then $7^{3b} =$

(i) a^3 (ii) x^3 (iii) $3y$ (iv) y^3 (v) $3b$

2. $log_{14^6} 14^{35} =$

(i) 7.8333 (ii) 3.8333 (iii) 4.8333 (iv) 5.8333 (v) 6.8333

3. $log_{10} \frac{7}{10} =$

(i) $2 log 7 - log 2 - log 5$ (ii) $log 7 - -2 log 2 - log 5$ (iii) $log 6 - log 2 - log 5$ (iv) $log 7 - log 4 - log 5$

(v) $log 7 - log 2 - log 5$

4. Find the value of x if $log_x 256 = 4$

(i) 5 (ii) 3 (iii) 6 (iv) 4 (v) 1

5. $log_5 48 =$

(i) $log_7 48 - log_5 7$ (ii) $log_7 48 \times log_5 7$ (iii) $log_7 48 \div log_5 7$ (iv) $log_5 7 \div log_7 48$ (v) $log_7 48 + log_5 7$

6. $log 97.0000 - log 50.0000 =$

(i) $log 0.9400$ (ii) $log 2.9400$ (iii) $log 3.9400$ (iv) $log 1.9400$ (v) $log 9.9400$

7. $log \frac{74}{85} - log \frac{59}{78} =$

(i) $log \frac{1154}{1003}$ (ii) $log \frac{5774}{5015}$ (iii) $log \frac{1924}{1671}$ (iv) $log \left(\frac{5772}{5015}\right)^2$ (v) $log \frac{5772}{5015}$

8. If $log_6 x = p$ and $log_6 y = q$, then $\frac{x}{y} =$

(i) $6^{(p+q)}$ (ii) 6^{pq} (iii) 6^{2pq} (iv) $6^{(p-q)}$

9. $log_{\frac{4}{5}} \frac{3}{5} =$

(i) $log \frac{3}{5} \div log \frac{4}{5}$ (ii) $log \frac{4}{5} \div log \frac{3}{5}$ (iii) $log \frac{3}{5} \times log \frac{4}{5}$ (iv) $log \frac{3}{5} - log \frac{4}{5}$ (v) $log \frac{3}{5} + log \frac{4}{5}$

10. $log_4 8 =$

(i) 3.5 (ii) 0.5 (iii) 9.5 (iv) 2.5 (v) 1.5

11. Express $log\ \sqrt{p^3 q^3}$ in terms of $log\ p$ and $log\ q$

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

12. $log_{6561} 729 =$

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

13. $log_{343} 49 =$

(i) 1.6667 (ii) 2.6667 (iii) 0.6667 (iv) 8.6667 (v) 7.6667

14. If $(x^2 + y^2) = 51\,xy$, then $log\,(x - y) =$

(i) $\frac{1}{2}\,log\ x - \frac{1}{2}\,log\ y - log\ 7$ (ii) $\frac{1}{2}\,log\ x + \frac{1}{2}\,log\ y - log\ 7$ (iii) $\frac{1}{2}\,log\ x + \frac{1}{2}\,log\ y + log\ 7$

(iv) $\frac{1}{2}\,log\ x - \frac{1}{2}\,log\ y + log\ 7$

15. Express $log_6 \frac{\sqrt{p^3 q^5}}{r^3 s}$ in terms of $log_6 p$, $log_6 q$, $log_6 r$ and $log_6 s$

(i) $\frac{3}{2}\,log_6 p + \frac{5}{2}\,log_6 q + 3\,log_6 r - log_6 s$ (ii) $\frac{3}{2}\,log_6 p + \frac{5}{2}\,log_6 q - 3\,log_6 r - log_6 s$

(iii) $\frac{3}{2}\,log_6 p - \frac{5}{2}\,log_6 q + 3\,log_6 r - log_6 s$ (iv) $\frac{3}{2}\,log_6 p - \frac{5}{2}\,log_6 q - 3\,log_6 r + log_6 s$

(v) $\frac{3}{2}\,log_6 p - \frac{5}{2}\,log_6 q - 3\,log_6 r - log_6 s$

16. If $log\ 2 = 0.3010, log\ 3 = 0.4771, log\ 5 = 0.6989, log\ 7 = 0.8451,$
the value of $log_{10.00} 6.4800$ is

(i) 8.811 (ii) 0.811 (iii) 1.811 (iv) 7.811 (v) 2.811

17. If $(x^2 + y^2) = 62\,xy$, then $2\,log\,(x + y) =$

(i) $log\ x + log\ y + 3\,log\ 4$ (ii) $log\ x + log\ y - 3\,log\ 4$ (iii) $log\ x - log\ y - 3\,log\ 4$ (iv) $log\ x - log\ y + 3\,log\ 4$

18. $log\ 27 + log\ 1 =$

(i) $log\ 29$ (ii) $log\ 27^2$ (iii) $log\ 27$ (iv) $log\ 25$ (v) $log\ 26$

19. If $log\ 2 = 0.3010, log\ 3 = 0.4771, log\ 5 = 0.6989, log\ 7 = 0.8451,$
the value of $log\ 400^{95}$ is

(i) 248.171 (ii) 246.171 (iii) 245.171 (iv) 249.171 (v) 247.171

20. $log\,65^5 + log\,65^9 =$

(i) $log\,63^{14}$ (ii) $log\,65^{13}$ (iii) $log\,65^{14}$ (iv) $log\,67^{14}$ (v) $log\,65^{15}$

21. $log\,55.0000 + log\,82.0000 =$

(i) $log\,4511.0000$ (ii) $log\,4510.0000$ (iii) $log\,4512.0000$ (iv) $log\,4508.0000$ (v) $log\,4509.0000$

22. Express $log_2 \frac{a^5c^3}{\sqrt{b}}$ in terms of $log_2 a$, $log_2 b$ and $log_2 c$

(i) $5\,log_2 a - 3\,log_2 c + \frac{1}{2}\,log_2 b$ (ii) $3\,log_2 c - \frac{1}{2}\,log_2 b + 5\,log_2 a$ (iii) $5\,log_2 a - 3\,log_2 c - \frac{1}{2}\,log_2 b$

(iv) $5\,log_2 a + 3\,log_2 c - \frac{1}{2}\,log_2 b$ (v) $5\,log_2 a + 3\,log_2 c + \frac{1}{2}\,log_2 b$

23. $log_{\frac{3}{5}} 4^4 =$

(i) $log_{\frac{1}{5}} 2^4$ (ii) $4\,log_{\frac{3}{5}} 6$ (iii) $4\,log_{\frac{3}{5}} 4$ (iv) $3\,log_{\frac{3}{5}} 4$ (v) $5\,log_{\frac{3}{5}} 4$

24. $log\,33^7 - log\,33^5 =$

(i) $log\,31^2$ (ii) $log\,33^2$ (iii) $log\,33^3$ (iv) $log\,33$ (v) $log\,36^2$

25. $log_{2^6} 30^2 =$

(i) $2\,log\,30 \times 6\,log\,2$ (ii) $2\,log\,30 + 6\,log\,2$ (iii) $2\,log\,30 - 6\,log\,2$ (iv) $6\,log\,2 \div 2\,log\,30$ (v) $2\,log\,30 \div 6\,log\,2$

Assignment Key

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

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