EduSahara™ Assignment

Name : Solving Logarithmic Equations

Chapter : Logarithms

Grade : ICSE Grade IX

1. Find the value of x if $\log_x 16 = 4$

   (i) 2 (ii) 1 (iii) 3 (iv) (-1) (v) 4

2. Find the value of x if $\log_2 x = 4$

   (i) 18 (ii) 17 (iii) 13 (iv) 15 (v) 16

3. Find the value of x if $\log_3 27 = x$

   (i) 3 (ii) 2 (iii) 0 (iv) 4 (v) 6

4. Find the value of x if $\log_{\sqrt{5}}(-2x+5) = 2$

   (i) -1 (ii) 0 (iii) 1 (iv) -2 (v) 2

5. Find the value of x if $\log_x \frac{1}{125} = -3$

   (i) 5 (ii) 8 (iii) 6 (iv) 4 (v) 3

6. Find the value of x if $\log(x+1) + \log(x-1) = \log 9$

   (i) $(10, (-\sqrt{10}))$ (ii) $(\sqrt{10}, (-10))$ (iii) $(10, (-10))$ (iv) $(\sqrt{10}, (-\sqrt{10}))$

7. Find the value of x if $\log_4(x+9) - \log_4(x-9) = 1$

   (i) 17 (ii) 15 (iii) 12 (iv) 16 (v) 14

8. Find the value of x if $\log_3(x^2-7) = 2$

   (i) $(5, (-4))$ (ii) $(4, (-4))$ (iii) $(4, (-3))$ (iv) $(5, (-3))$

9. Solve $\frac{\log x}{\log 9} = \frac{\log 36}{\log \frac{1}{6}}$

   (i) $\frac{1}{79}$ (ii) $\frac{1}{83}$ (iii) $\frac{1}{27}$ (iv) $(\frac{-1}{81})$ (v) $\frac{1}{81}$

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

(i) 7 (ii) 2 (iii) 5 (iv) 3 (v) 4

11. Find the value of x if $\log_2 x = 2$

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

12. Find the value of x if $\log_2 8 = x$

(i) 1 (ii) 3 (iii) 4 (iv) 6 (v) 2

13. Find the value of x if $\log_{\sqrt{5}}(3x-1) = 2$

(i) 2 (ii) 4 (iii) 1 (iv) 0 (v) 3

14. Find the value of x if $\log_x \frac{1}{16} = -4$

(i) 2 (ii) 5 (iii) 3 (iv) 1 (v) (-1)

15. Find the value of x if $\log(x+6) + \log(x-6) = \log 3$

(i) $(\sqrt{39}, (-\sqrt{39}))$ (ii) $(\sqrt{39}, (-39))$ (iii) $(39, (-39))$ (iv) $(39, (-\sqrt{39}))$

16. Find the value of x if $\log_2(x+6) - \log_2(x-6) = 1$

(i) 15 (ii) 19 (iii) 18 (iv) 20 (v) 17

17. Find the value of x if $\log_4(x^2-20) = 2$

(i) $(7, (-5))$ (ii) $(6, (-6))$ (iii) $(6, (-5))$ (iv) $(7, (-6))$

18. Solve $\frac{\log x}{\log 6} = \frac{\log 49}{\log \frac{1}{7}}$

(i) $\frac{1}{34}$ (ii) $\frac{1}{36}$ (iii) $\frac{1}{12}$ (iv) $\frac{1}{38}$ (v) $(\frac{-1}{36})$

19. If $\frac{\log(x^2+1)}{\log 2x^2} = 1$, find x

(i) $(0, -1)$ (ii) $(-1, 1)$ (iii) $(1, 1)$ (iv) $(0, 2)$ (v) $(-1, 0)$

20. If $\frac{log(x^2+4)}{log\,2x^2} = 1$, find x

(i) (-1,3) (ii) (1,-2) (iii) (-2,2) (iv) (0,2) (v) (-2,1)

Assignment Key

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