

Solve each equation below

1. $\log_4 \frac{x^2}{4} = \log_x 64$

2. $\log_6 6x = \log_x 36$

3. $x^{\log_4 x^2} = 4x$

4. $\log_7 \frac{x^3}{49} = \log_x 7$

$$5. \ x^{\log_2 x} = \frac{4}{x}$$

$$6. \ \log_5 \frac{x}{25} = \log_x 125$$

$$7. \ \log_3 9x = \log_x 27$$

$$8. \ x^{\log_8 x} = \frac{262144}{x}$$

$$9. \log_2 \frac{x^2}{2} = \log_x 2$$

$$10. x^{\log_7 x^3} = \frac{49}{x}$$

$$11. x^{\log_4 x^2} = \frac{x^3}{4}$$

$$12. x^{\log_5 x} = 25x$$

$$13. \quad x^{\log_9 x} = \frac{1}{81x^3}$$

$$14. \quad \log_5 25x^3 = \log_x 5$$

$$15. \quad \log_4 4x^2 = \log_x 64$$

$$16. \quad \log_9 \frac{x}{729} = \log_x \frac{1}{81}$$

$$17. \ x^{\log_5 x} = \frac{1}{25x^3}$$

$$18. \ \log_3 27x = \log_x \frac{1}{9}$$

$$19. \ x^{\log_4 x^3} = 4x^2$$

$$20. \ x^{\log_2 x^3} = 4x$$

21. $x^{\log_2 x^3} = 2x^2$

22. $x^{\log_5 x^2} = 5x$

23. $\log_3 3x^3 = \log_x 9$

24. $\log_6 6x^2 = \log_x 6$

$$25. \log_9 729x = \log_x \frac{1}{81}$$

$$26. \log_8 \frac{x}{512} = \log_x \frac{1}{64}$$

$$27. x^{\log_8 x} = 512x^2$$

$$28. x^{\log_4 x^2} = \frac{1}{4x^3}$$

$$29. \log_7 \frac{x}{7} = \log_x 49$$

$$30. \log_8 \frac{x^3}{8} = \log_x 64$$

$$31. x^{\log_6 x^2} = \frac{216}{x}$$

$$32. x^{\log_5 x^2} = \frac{5}{x}$$