Exponential Equations:

1. $5^x = 125$

2. $6^{2x} = 36$

3. $3^x = 243$

4. $2^{3x} = 64$

5. $2^x = \frac{1}{16}$

6. $3^x = \frac{1}{27}$

7. $5^x = \frac{1}{625}$

8. $2^{-x} = 128$

9. $3^{2x} = 81$

10. $6^{3x} = 36^{x+1}$

11. $8^{4+3x} = \frac{1}{4}$

12. $5^{-x^2} = \frac{1}{25}$

13. $9^{2-d^2} = \frac{1}{3}$

14. $25^{-2x} = 5^{6x-3}$

15. $2^{n+1} = 4^{1-2n}$

16. $3^x = 9^{x+1}$

17. $64^{x-4} = \left(\frac{1}{2}\right)^{2x}$

18. $\left(\frac{1}{2}\right)^{y+1} = 4^{3y-4}$

19. $3^x\left(3x^{x+1}\right) = 9$

20. $27^{-x} = 81^{3x+1}$

21. $8\left(2^{x-1}\right) = 64$

22. $125^{x+1} = 25^{3x-1}$

23. $\frac{1}{9} = 27^{2x}$

24. $\frac{1}{4} = 64^{2x-1}$

25. $\left(\frac{3}{4}\right)^{2x} = \frac{64}{27}$

26. $\left(\frac{2}{5}\right)^{2x} = \frac{125}{8}$

27. $\left(\frac{3}{7}\right)^{x} = \frac{49}{9}$

28. $\frac{2^{x-1}}{2^{3-4x}} = 16$

29. $\frac{3^{1-x}}{3^x} = 9^{5x}$

30. $\frac{4^{2x}}{2^{x-3}} = 1$