<u>DIRECTIONS</u>: Solve for the variable. Remember to get both sides to have the same bases. Then set your exponents equal to each other.

1. $3^x = \dfrac{1}{27}$

$$x = -3$$

2. $5^x = \sqrt{125}$

$$x = \dfrac{3}{2}$$

3. $8^{2+x} = 2$

$$x = -\dfrac{5}{3}$$

4. $4^{1-x} = 8$

$$x = -\dfrac{1}{2}$$

5. $27^{2x-1} = 3$

$$x = \dfrac{2}{3}$$

6. $49^{x-2} = 7\sqrt{7}$

$$x = \dfrac{11}{4}$$

7. $4^{2x+5} = 16^{x+1}$

No solution

8. $3^{-(x+5)} = 9^{4x}$

$$x = -\dfrac{5}{9}$$

9. $25^{2x} = 5^{x+6}$

$$x = 2$$

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

$$x = 3$$

11. $10^{x-1} = 100^{4-x}$ $x = 3$