

Coordinate Algebra

Simple Exponential Equations

Name Key Period _____

Solve for x.

1. $2^x = 8$

$$2^x = 2^3$$

$$x = 3$$

2. $3^x = 9$

$$3^x = 3^2$$

$$x = 2$$

3. $4^x = 64$

$$4^x = 4^3$$

$$x = 3$$

4. $5^x = \frac{1}{25}$

$$5^x = 5^{-2}$$

$$x = -2$$

5. $6^x = \frac{1}{216}$

$$6^x = 6^{-3}$$

$$x = -3$$

6. $5^x = 125$

$$5^x = 5^3$$

$$x = 3$$

7. $243 = 3^x$

$$3^5 = 3^x$$

$$5 = x$$

$$x = 5$$

8. $2^x + 4 = 68$

$$\begin{array}{r} -4 \quad -4 \\ 2^x = 64 \end{array}$$

$$2^x = 2^6$$

$$x = 6$$

9. $6^x - 1 = 35$

$$\begin{array}{r} +1 \quad +1 \\ 6^x = 36 \end{array}$$

$$6^x = 6^2$$

$$6^x = 6^2$$

$$x = 2$$

10. $2^x + \frac{1}{16} = \frac{2}{16}$

$$\begin{array}{r} -\frac{1}{16} \quad -\frac{1}{16} \\ 2^x = \frac{1}{16} \end{array}$$

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

$$2^x = 2^{-4}$$

$$x = -4$$