

HW: Worksheet

Warm up:

Write in exponential form.

1) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ 2^6

2) $6 \cdot 6 \cdot 6$ 6^3

3) $(-4)(-4)(-4)(-4)(-4)$ $(-4)^5$

Evaluate. Write your answer in exponential form.

$$1) 2^1 * 2^2 = 2 \cdot 2 \cdot 2 = 2^3$$

$$2) 2^2 * 2^2 = 2 \cdot 2 \cdot 2 \cdot 2 = 2^4$$

$$3) 2^2 * 2^3 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^5$$

$$4) 2^3 * 2^4 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^7$$

Do you notice a pattern?

add the exponents

$$x^3 \cdot x^5$$

$$x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x = x^8$$

For any numbers x , a , and b

$$x^a \cdot x^b = x^{a+b}$$

1) $2^3 \cdot 2^6$

2) $4^9 \cdot 4^3$

3) $6^4 \cdot 6^2$

4) $(-5)^7 \cdot (-5)^9$

5) $(3.7)^{10} \cdot (3.7)^{10}$

6) $x^{15} \cdot x^{12}$

7) $3^x \cdot 3^5$

8) $3^4 \cdot 3$

$$1) 2^3 \cdot 2^6 \quad 2^9$$

$$2) 4^9 \cdot 4^3 \quad 4^{12}$$

$$3) 6^4 \cdot 6^2 \quad 6^6$$

$$4) (-5)^7 \cdot (-5)^9 \quad (-5)^{16}$$

$$5) (3.7)^{10} \cdot (3.7)^{10} \quad (3.7)^{20}$$

$$6) x^{15} \cdot x^{12} \quad x^{27}$$

$$7) 3^x \cdot 3^5 \quad 3^{x+5}$$

$$8) 3^4 \cdot 3^1 = 3^5$$

$$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$$

$$x^3 y^5 \cdot x^9 y^2$$

$$x^{12} y^7$$

$$-2a \cdot 5b$$

$$-10ab$$

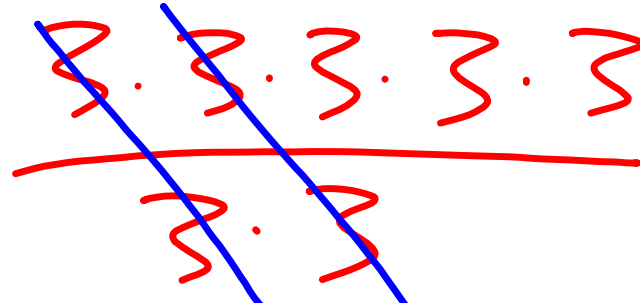
$$-2a^4 b^2 \cdot 5a^7 b^8$$

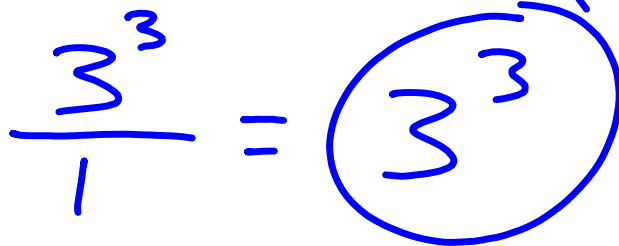
$$-10a^{11} b^{10}$$

$$-2a^4 \cdot a^3$$
$$\textcircled{-2a^7}$$

$$\frac{12}{18} = \frac{\cancel{6} \cdot 2}{\cancel{6} \cdot 3} = \frac{\cancel{6}}{\cancel{6}} \cdot \frac{2}{3}$$

$\left(\frac{2}{3}\right)$

$$\frac{3^5}{3^2}$$


$$\frac{3^3}{1} = 3^3$$


$$\frac{x^7}{x^3} = \frac{\cancel{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}}{\cancel{x \cdot x \cdot x}}$$

x^4

For any numbers x , a , and b ...

$$\frac{x^a}{x^b} = x^{a-b}$$

$$\frac{x^{12}}{x^5} = x^7$$

$$\frac{y^{20}}{y^3} = y^{17}$$

$$\frac{a^8}{a} = a^7$$

1) $\frac{3^9}{3^7}$

2) $\frac{(-1.7)^6}{(-1.7)^3}$

3) $\frac{x^{17}}{x^4}$

4) $\frac{y^9}{y^8}$

5) $\frac{x^{5y+3}}{x^9}$

$$1) \frac{3^9}{3^7} \quad 3^2$$

$$2) \frac{(-1.7)^6}{(-1.7)^3} \quad (-1.7)^3$$

$$3) \frac{x^{17}}{x^4} \quad x^{13}$$

$$4) \frac{y^9}{y^8} = y$$

$$5) \frac{x^{5y+3}}{x^9} = x^{5y+3-9}$$

x^{5y-6}

$$\frac{12x^8y^{10}}{2x^2y^4} = 6x^6y^6$$

