

$$11) (2x^4y^{-4})^4$$

$$12) (u^0v^2)^2$$

$$13) (4a^2b^0)^4$$

$$14) (2x^4y^2)^3$$

$$15) (3y^3)^{-4}$$

$$16) (vu^4)^{-2}$$

$$(ab)^m = a^m b^m$$

$$(a^x b^y)^m = a^{xm} b^{ym}$$

$$(a^m)^n = a^{mn}$$

$$(a^2)^3 = \overset{2}{a} \overset{2}{a} \overset{2}{a} = a^{3(2)}$$


$$(ab)^4 = \overset{2}{a} \overset{2}{b} \overset{2}{a} \overset{2}{b} \overset{2}{a} \overset{2}{b} \overset{2}{a} \overset{2}{b}$$

$$a^4 b^4$$

$$a^{2(4)} b^{3(4)}$$

$$17) (3x^{-4}y^2)^3$$

$$3^3 x^{-4(3)} y^{2(3)}$$

$$3^3 x^{-12} y^6$$


$$\frac{27y^6}{x^{12}}$$

$$32) \frac{n^{-1} \cdot -2mn^3}{m^{-2}} = (n^{-1} \cdot -2mn^3) \div m^{-2}$$

$$-2m n^{-1} \cdot n^3$$

$$-2m n^{-1+3}$$

$$-2m n^2$$

$$\frac{-2m n^2 m^2}{m^{-2}}$$

$$-2m \cdot m^2 n^2$$

$$-2m^{1+2} n^2$$

$$-2m^3 n^2$$

$$31) \left(\frac{-x^2 y^2}{-x^4 y^{-2}} \right)^4$$

$$\frac{-x^2 y^2}{-x^4 y^{4+(-2)}}$$

$$\frac{+x^2 y^2}{+x^4 y^2}$$

$$= \frac{\cancel{x} \cancel{x}}{\cancel{x} \cancel{x} \cancel{x} \cancel{x}} = \left(\frac{1}{x^2} \right)^4$$

$$= \frac{1}{(x^2)^4}$$

$$= \frac{1}{x^8}$$

$$x^{-2-4} = x^{-6} = \frac{1}{x^6}$$

$$37) \left(\frac{-yx^{-1} \cdot 2x^3y^3}{-2x^{-4}y^{-4}} \right)^2$$

$$\frac{a^m}{a^n} = a^{m-n}$$

$$-2x^{-1}y^3$$

$$-2x^{-1}y^{1+3}$$

$$\frac{-2x^{-1}y^4}{-2x^{-4}y^4}$$

$$= x^{-1-(-4)} y^{4-(-4)}$$

$$= x^3 y^8$$

$$= (x^3 y^8)^2$$

$$= x^{3(2)} y^{8(2)}$$

$$= x^6 y^{16}$$

Evaluate each expression.

1) $\frac{7 + (-2)}{-9} + (-9)$

$$(7 + 2) \div (-9) + 9$$

$$9 \div -9$$

$$-1 + 9$$

$$8$$

$$13) (4a^2b^0)^4$$

$$4^4 (a^2)^4 (b^0)^4$$

$$256 a^{2(4)} b^{0(4)}$$
$$256 a^8 b^0 = 256 a^8 (1) = 256 a^8$$

$$12) (u^0 v^2)^2$$

$$(u^0)^2 (v^2)^2$$

$$u^{0 \cdot 2} v^{2 \cdot 2}$$

$$u^0 v^4 = |v^4 = v^4$$

$$11) (2x^4y^{-4})^4$$

$$\begin{aligned} & (2 \cdot x^4 \cdot y^{-4})^4 \\ & 2^4 (x^4)^4 (y^{-4})^4 \\ & 2^4 x^{16} y^{-16} \\ & \frac{16x^{16}}{y^{16}} \end{aligned}$$

$$y^{-a} = \frac{1}{y^a}$$