Fill in the next three entries in the right-hand column

As you move down a row subtract one from the exponent.

As you move down a row divide by 2.

2^4	16
2^3	8
2^2	4
2^1	2
2^0	1
2^{-1}	$\frac{1}{2}$

$a^0 = 1$ any nonzero number to the zero power equals 1

$a^{-n} = \frac{1}{a^n}$ any nonzero number raised to a negative integer power is the reciprocal of that number to the positive power.

Some rules of exponents:

$a^1 = a$

$a^0 = 1$

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

$a^n \cdot a^m = a^{n+m}$

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

$(a^n b^m)^x = a^{nx} \cdot b^{mx}$

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

$\left(\frac{a^n}{b^m}\right)^x = \frac{a^{nx}}{b^{mx}}$

Simplify.

1. $(5m^2n)(6m^4n^3) = 30m^6n^4$

2. $(2c^4d)^3(5c^3d^4)^2$

$(8c^{12}d^3)(25c^6d^8) = 200c^{18}d^{11}$

Simplify each. Give answers without any negtive exponents or zero as an exponent.

3. $\frac{5e^8}{20e^2} = \frac{e^6}{4}$

4. $\left(\frac{P^4Q^6}{P^9Q^3}\right)^2$

Simplify inside then square

or Square then simplify

$\left(\frac{Q^3}{P^5}\right)^2 = \frac{Q^6}{P^{10}}$ or $\frac{P^8Q^{12}}{P^{18}Q^6}$

Simplify each. Give answers without any negtive exponents or zero as an exponent.

5. $\dfrac{8m^{-2}c^4d^0}{6a^{-3}}$

$\dfrac{4c^4a^3}{3m^2}$

6. $\dfrac{M^3K^5M^{-8}}{K^7}$ m^{-5}

$\dfrac{1}{m^5K^2}$