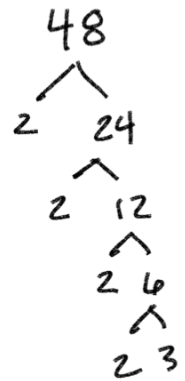
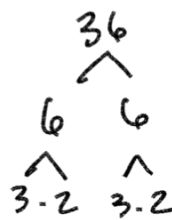


36, 48



1.) Reduce  $\frac{36}{48}$

$$\frac{36}{48} = \frac{\cancel{3} \cdot \cancel{3} \cdot \cancel{2} \cdot \cancel{2}}{\cancel{3} \cdot \cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot 2} = \frac{3}{4}$$

2.) Find the LCM

$$\begin{array}{l}
 36 = \cancel{3} \cdot \cancel{3} \cdot \cancel{2} \cdot \cancel{2} = 3 \\
 48 = 3 \cdot \cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot 2 = 48
 \end{array}$$

$$\begin{array}{r}
 48 \\
 \times 3 \\
 \hline
 144
 \end{array}$$

3.) Find the GCF

$$\begin{array}{l}
 36 = 3 \cdot 3 \cdot 2 \cdot 2 \\
 48 = 3 \cdot 2 \cdot 2 \cdot 2 \cdot 2
 \end{array}$$

$$3 \cdot 2 \cdot 2 = 12$$

1.) Reduce  $\frac{20x^5y^3}{16x^3y^8}$

$$\begin{array}{r} 20 \\ \wedge \\ 10 \ 2 \\ \wedge \\ 5 \cdot 2 \end{array} \qquad \begin{array}{r} 16 \\ \wedge \\ 2 \ 8 \\ \wedge \\ 4 \ 2 \end{array}$$

$$\frac{20}{16} = \frac{\cancel{5 \cdot 2 \cdot 2} \cdot \cancel{x \cdot x \cdot x \cdot x \cdot x} \cdot \cancel{y \cdot y \cdot y}}{\cancel{2 \cdot 2 \cdot 2 \cdot 2} \cdot \cancel{x \cdot x \cdot x} \cdot \cancel{y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y}} = \frac{5x^2}{4y^5}$$

$$\frac{x^5}{x^3} = x^{5-3} = x^2 \qquad \frac{y^3}{y^8} = y^{3-8} = y^{-5} = \frac{1}{y^5} \text{ denominator}$$

2.) GCF  $20x^5y^3, 16x^3y^8$

$$= \frac{\cancel{5 \cdot 2 \cdot 2} \cdot \cancel{x \cdot x \cdot x \cdot x \cdot x} \cdot \cancel{y \cdot y \cdot y}}{\cancel{2 \cdot 2 \cdot 2 \cdot 2} \cdot \cancel{x \cdot x \cdot x} \cdot \cancel{y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y}}$$

$$4x^3y^3$$

$$8a^3b^4c^5 * 4a^7bc^4 = 32a^{10}b^5c^9$$

$$a^3 * a^7 = a^{3+7} = a^{10}$$

$$b^4 * b = b^{4+1} = b^5$$

$$c^5 * c^4 = c^{5+4} = c^9$$

$$8 * 4 = 32$$

multiply exponents  
(with the same  
base), you add  
them.

$$\frac{18a^3b^7c}{3ab^4c^3} = \frac{6a^2b^3}{c^2}$$

$$\frac{a^3}{a^1} = a^{3-1} = a^2$$

$$\frac{c}{c^3} = \frac{c^1}{c \cdot c \cdot c} = \frac{1}{c^2}$$

$$\frac{b^7}{b^4} = b^{7-4} = b^3$$

$$\frac{18}{3} = 6$$

$$\frac{c}{c^3} = c^{1-3} = c^{-2}$$

Divide exponents  
(with the same base),  
we subtract.

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$$3^0 = 1 \quad -2^0 = 1 \quad x^0 = 1 \quad \left( \overset{\text{Hey!}}{\underset{0}{x^3}} \right)^0 = 1$$

$$(2^1 a^3 b^5)^3 = 2^3 a^9 b^{15} = \boxed{8a^9 b^{15}}$$

$$(2a^3b^5)^3 = (2a^3b^5) \cdot (2a^3b^5) \cdot (2a^3b^5)$$

$$8a^{3+3+3} b^{5+5+5}$$

$$\boxed{8a^9 b^{15}}$$

$$1.) \quad 3x^4y^7 * 5x^6y^3 = 15x^{4+6}y^{7+3}$$

$$\boxed{15x^{10}y^{10}}$$

$$2.) \quad \frac{24a^5b^7c}{8a^2b^4c^6} = \frac{3a^{5-2}b^{7-4}c^{1-6}}{3a^3b^3c^{-5}} = \boxed{\frac{3a^3b^3}{c^5}}$$

$$3.) \quad (4^1 a^7 b^3)^2 = 4^2 a^{14} b^6 = \boxed{16a^{14}b^6}$$

$$\frac{4a^2}{b^3}$$

$$a = 5$$

$$b = 2$$

PEMDAS

$$\frac{4(5)^2}{(2)^3} = \frac{4(25)}{8} = \frac{100 \div 4}{8 \div 4}$$

$$\boxed{\frac{25}{2}}$$

$$4x^2y^3$$

$$x = 1 \quad y = 2$$

$$4(1)^2(2)^3$$

$$4 \cdot 1 \cdot 1 \cdot 2 \cdot 2 \cdot 2$$

$$(4)(1) \cdot (8) = \boxed{32}$$

$$\frac{8a^2b^3}{c}$$

$$a = 4 \quad b = 2 \quad c = 32$$

$$\frac{8 \cdot (4)^2 \cdot (2)^3}{32} = \frac{8 \cdot 16 \cdot 8}{32} = \boxed{32}$$

