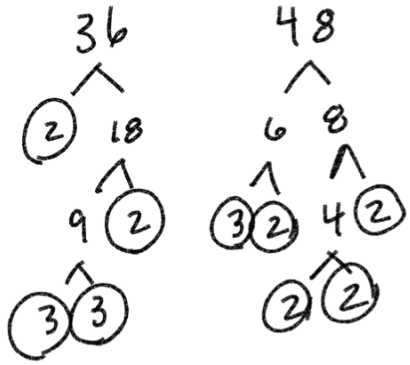
W-PA Pre-Algebra Week 18 1/24

36, 48



1.) Reduce $\frac{36}{48} = \frac{36 : 3 \cdot 3 \cdot 2 \cdot 2}{48 : 3 \cdot 2 \cdot 2 \cdot 2 \cdot 2} = \boxed{\frac{3}{4}}$

$\frac{36}{48}$

2.) Find the LCM

THANOS

36 : 3 · 3 · 2 · 2

48 : 3 · 2 · 2 · 2 · 2

$= 3 * 48 = \boxed{144}$

3.) Find the GCF

36 : 3 · 3 · 2 · 2

48 : 3 · 2 · 2 · 2 · 2

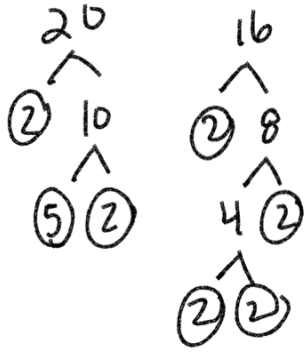
$3 * 2 * 2 = \boxed{12}$

$\frac{36}{48} \div GCF$ $\quad \frac{36 \div 12}{48 \div 12} = \boxed{\frac{3}{4}}$

1.) Reduce $\frac{20x^5y^3}{16x^3y^8} = \frac{5 \cdot 2 \cdot 2}{2 \cdot 2 \cdot 2 \cdot 2} x^{5-3} y^{3-8}$

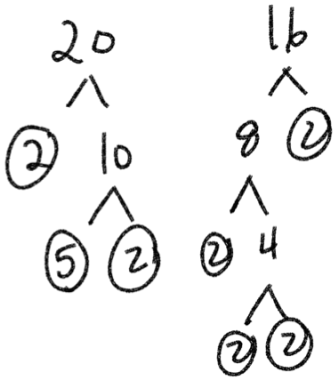
bottom

$\frac{5}{4} x^2 y^{-5} = \boxed{\frac{5x^2}{4y^5}}$



$\frac{20x^5y^3}{16x^3y^8} = \frac{5 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y}{2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y} = \boxed{\frac{5x^2}{4y^5}}$

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



20: 5 2 2

16: 2 2 2 · 2

$2 \cdot 2\, x^3 y^3 = \boxed{4x^3y^3}$

Wyatt $\quad$ 3 cookies $\quad$ 5 cupped cakes

Man the Hit with Car $\quad$ 8 cookies $\quad$ 3 cupped cakes

Both have in common: 3 cookies 3 cupped cakes

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

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

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

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

$8 * 4 = 32$

Multiply exponents (with the same base) you add them.

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

$\oplus$ top

$$\frac{a^{\boxed{3}}}{a} = a^{3-1} = a^2 \qquad \frac{a^3}{a} = \frac{\cancel{a}\cdot a\cdot a}{\cancel{a}} = a^2$$

$\oplus$ top

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

$\ominus$ bottom

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

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

bottom

$$x^{-4} = \frac{1}{x^4} \qquad c^{-8} = \frac{1}{c^8} \qquad d^{-5} = \frac{1}{d^5}$$

$$3^0 = 1$$

$$\frac{3^4}{3^4} = \frac{\cancel{3}\cdot\cancel{3}\cdot\cancel{3}\cdot\cancel{3}}{\cancel{3}\cdot\cancel{3}\cdot\cancel{3}\cdot\cancel{3}} = \frac{1}{1} = \boxed{1} \qquad \frac{3^4}{3^4} = 3^{4-4} = \boxed{3^0}$$

$$-2^0 = 1 \qquad x^0 = 1$$

$$= 1$$

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

$$2^{3} = 2\cdot 2\cdot 2 = 8$$

1.) $3x^{4}y^{7} * 5x^{6}y^{3} = 15x^{4+6}y^{7+3} = \boxed{15x^{10}y^{10}}$

$3 * 5 = 3 \times 5$

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

$3a^{3}b^{3}c^{-5} = \boxed{\dfrac{3a^{3}b^{3}}{c^{5}}}$

3.) $(4a^{7}b^{3})^{2} = 4^{2}a^{7\cdot 2}b^{3\cdot 2}$

$\boxed{16a^{14}b^{6}}$

Evaluating exponents

$$\frac{4a^2}{b^3} \qquad a = 5 \qquad b = 2$$

exponents

PEMDAS!!

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

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

$5^2 = 5 \cdot 5 = 25$

$2^3 = 2 \cdot 2 \cdot 2 = 8$

1.) $4x^2y^3 \qquad x = 1 \qquad y = 2$

$$4(1)^2(2)^3 = 4(1)(8) = \boxed{32}$$

$1 \qquad 8$

2.) $\dfrac{8a^2b^3}{c} \qquad a = 4 \qquad b = 2 \qquad c = 32$

$$\frac{8(4)^2(2)^3}{32} = \frac{8(16)(8)}{32} = \frac{1024}{32}$$

$$= \boxed{32}$$