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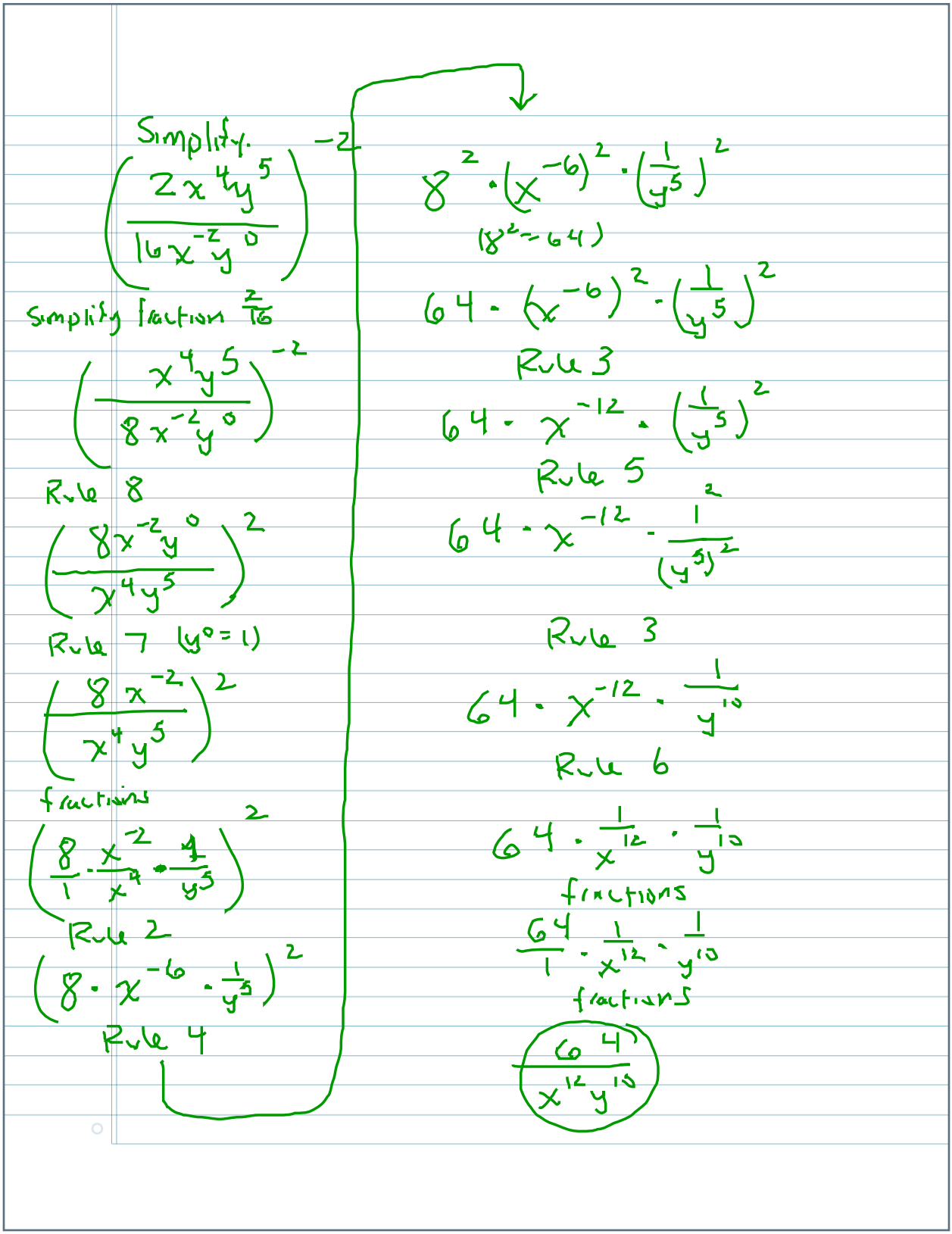


livescribe

Simplify.

$$\left(\frac{2x^4y^5}{16x^{-2}y^0}\right)^{-2}$$

Simplify fraction $\frac{2}{16}$

$$\left(\frac{x^4y^5}{8x^{-2}y^0}\right)^{-2}$$

Rule 8

$$\left(\frac{8x^{-2}y^0}{x^4y^5}\right)^2$$

Rule 7 ($y^0=1$)

$$\left(\frac{8x^{-2}}{x^4y^5}\right)^2$$

fractions

$$\left(\frac{8}{1}\cdot\frac{x^{-2}}{x^4}\cdot\frac{1}{y^5}\right)^2$$

Rule 2

$$\left(8\cdot x^{-6}\cdot\frac{1}{y^5}\right)^2$$

Rule 4

$$8^2\cdot\left(x^{-6}\right)^2\cdot\left(\frac{1}{y^5}\right)^2$$

($8^2=64$)

$$64\cdot\left(x^{-6}\right)^2\cdot\left(\frac{1}{y^5}\right)^2$$

Rule 3

$$64\cdot x^{-12}\cdot\left(\frac{1}{y^5}\right)^2$$

Rule 5

$$64\cdot x^{-12}\cdot\frac{1^2}{(y^5)^2}$$

Rule 3

$$64\cdot x^{-12}\cdot\frac{1}{y^{10}}$$

Rule 6

$$64\cdot\frac{1}{x^{12}}\cdot\frac{1}{y^{10}}$$

fractions

$$\frac{64}{1}\cdot\frac{1}{x^{12}}\cdot\frac{1}{y^{10}}$$

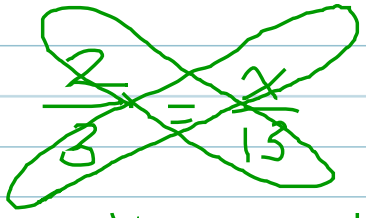
fractions

$$\frac{64}{x^{12}y^{10}}$$

Extra Credit Int. Mydbra Feb. 12, 2019

Proportions LH p. 165 | exponent rules LH p. 154 | Scientific notation p 156

p. 166 def: a proportion is an equation with two equal fractions



proportions can be solved by setting the cross multiples equal

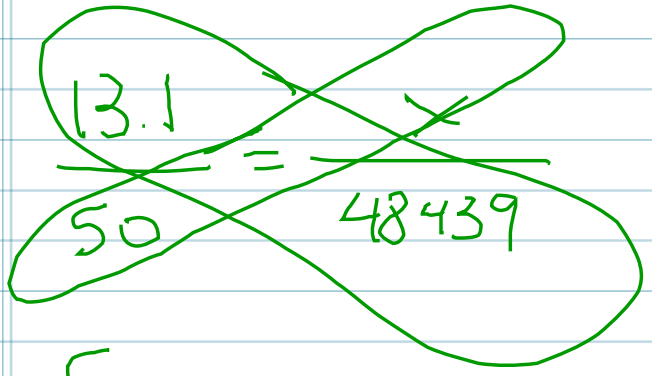
$$3 \cdot x = 2 \cdot 13$$

$$\frac{3x}{3} = \frac{26}{3}$$

$$x = \frac{26}{3}$$

66.25

$$\frac{\text{\# of women}}{\text{total \# of employees}} \quad \frac{13.1}{50} = \frac{x}{48439}$$



$50 \cdot x = 13.1 \cdot 48439$

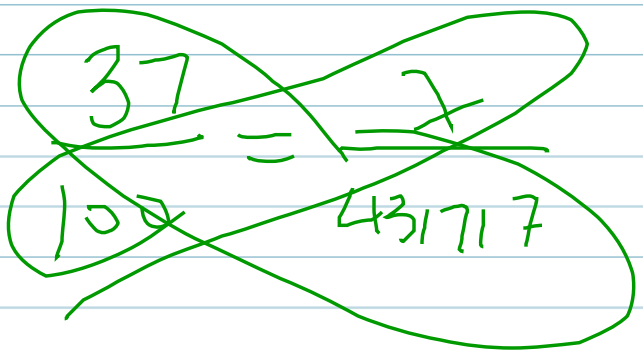
$\frac{50x}{50} = \frac{634550.9}{50}$

$x = 12691.018$

$x \approx 12691$ women

Now You Try!

A local town recently conducted a survey of 100 homeowners. The survey found that 37 out of the 100 homeowners had a pool. If the town has a total of 431,717 homes, estimate the number of homes with a pool. Keep your answer exact til the end, then round to the nearest whole number.



# of homes w/ pool

total # of homes

$100 \cdot x = 37 \cdot 431717$

$\frac{100x}{100} = \frac{15973529}{100}$

$x = 159735.29$

0, 1, 2, 3, 4 round down
5, 6, 7, 8, 9 round up

$x \approx 159735$

Exponent Rules

LN p. 154

A hyphen, in math, is shorthand for $-1 \cdot$

p. 155 #18

Evaluate both expressions:

-2^0

$-1 \cdot 2^0$

$-1 \cdot 1$

-1

$(-2)^0$

1

$-2^0 \neq (-2)^0$

#28 Evaluate

$$(-6)^{-2}$$

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

x : the base

base is -6

$$(-6)^{-2} = \frac{1}{(-6)^2} = \frac{1}{36}$$

#58 Simplify.

$$\frac{z^{8t}\, z^{9t-7}}{z^{7t}}$$

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

$$\frac{z^{8t+9t-7}}{z^{7t}}$$

$$\frac{z^{17t-7}}{z^{7t}}$$

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

$$\frac{z^{17t-7}}{z^{7t}}$$

$z^{17t-7-7t}$

z^{10t-7}

(1) run (2) red (3) blue
(4) blue (5) blue (6) green
(7) red (8) green

#20 Simplify

$$\left(\frac{4a^{-2}b^{5}}{2a^{2}b^{-7}}\right)^{-3}$$

$$\left(\frac{a^{-2}b^{5}}{2a^{2}b^{-7}}\right)^{-3}$$

fractions

exponentials 5
parentheses ( ) 1
negative exponents : 3

$$\left(\frac{2a^2b^{-7}}{a^{-2}b^5}\right)^3$$

fractions

$$\left(\frac{2}{1}\cdot\frac{a^2}{a^{-2}}\cdot\frac{b^{-7}}{b^5}\right)^3$$

Rule 2

$$\left(2\cdot a^4\cdot b^{-12}\right)^3$$

Rule 4

$$2^3\cdot\left(a^4\right)^3\cdot\left(b^{-12}\right)^3$$

$2^3=8$

$$8\cdot\left(a^4\right)^3\cdot\left(b^{-12}\right)^3$$

Rule 3

$$8\cdot a^{12}\cdot b^{-36}$$

Rule 6

$$\frac{8a^{12}}{1}\cdot\frac{1}{b^{36}}$$

fractions

$$\frac{8a^{12}}{b^{36}}$$

$$\frac{x^m}{x^n}=x^{m-n}$$ Rule 2

$2-(-2)$

$2+2$

4

$-7-5$

-12

$$(xy)^m$$

$$x^m y^m$$

$$(xyz)^m$$

$$x^m y^m z^m$$

$$\left(x^m\right)^n = x^{mn}$$

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

Simplify.

$$\left(\frac{2x^{4}y^{5}}{16x^{-2}y^{0}}\right)^{-2}$$