TH-PA Pre-Algebra Week 28 4/24

Ratio

part : part

pizza | sundae
IIII | III

pizza : sundae
4 : 3

Ramen Truck | Dip n' Shot
14 | 6

Ratio RT : DnS
14 : 6
÷2 ÷2
7 : 3

Fraction

$\frac{\text{part}}{\text{whole}}$

$\frac{\text{pizza}}{\text{total}} = \frac{4}{7}$ or $\frac{4}{4+3}$

cross multiply

$\frac{\text{pizza}}{\text{students}} = \frac{4}{7} \times \frac{x}{350}$

$\frac{7x}{7} = \frac{(4)(350)}{7}$

$x = \frac{(4)(350)}{7} = 200$

Proportion

$126 \div 7 = 18$

$\frac{7}{3} \times \frac{126}{x}$

$\frac{7x}{7} = \frac{(126)(3)}{7}$ $x = \frac{(126)(3)}{7} = 54$

$\frac{\text{Ramen}}{\text{Dip n' Shot}}$ $\frac{7}{3} = \frac{126}{x}$ *18 54

Exceptional Jokes	Awful Jokes
2	248

Find ratio exceptional : awful

$\frac{2}{2} : \frac{248}{2}$ → $\boxed{1 : 124}$

$\frac{\text{Exceptional}}{\text{Awful}} \quad \frac{2}{248} = \frac{30}{x}$

$\frac{2x}{2} = \frac{(248)(30)}{2}$

$x = \frac{(248)(30)}{2} = \frac{7440}{2}$

$\boxed{x = 3720}$

Unit Price

Celsius

4 pack $9.89

12 pack $26.99

$\frac{\text{cost}}{\text{can}} \quad \frac{\$9.89}{4} = \boxed{\$2.47}$

$\frac{\text{Cost}}{\text{can}} = \frac{\$26.99}{12} = \boxed{\$2.25}$

Which is the better buy?

Chick Fil A

30 count nug $17.29

Catering Chicken Minis

80 count $63.00

unit price

$$\frac{\$}{\text{nug}} = \frac{\$17.29}{30} = \boxed{\$0.57}$$

$$\frac{\$}{\text{mini}} = \frac{\$63.00}{80} = \$0.78$$

Proportions

$$\frac{6}{x} = \frac{18}{42}$$

$$\frac{18x}{18} = \frac{(6)(42)}{18}$$

$$x = \frac{252}{18} = \boxed{14}$$

$$\frac{6}{x} = \frac{18}{42}$$

$\div 3$

14

$\div 3$

1.) $\frac{12}{21} = \frac{x}{14}$

$$21x = (12)(14)$$

$$\frac{21x}{21} = \frac{168}{21}$$

$$\boxed{x = 8}$$

2.) $\frac{x}{9} = \frac{26}{6}$

$$6x = (26)(9)$$

$$\frac{6x}{6} = \frac{234}{6}$$

$$\boxed{x = 39}$$

$$\frac{x+2}{8} = \frac{9}{24}$$

$24(x+2) = (8)(9)$

$24(x+2) = 72$

$24x + 48 = 72$

$-48 \quad -48$

$\frac{24x}{24} = \frac{24}{24}$

$\boxed{x = 1}$

$$\frac{x+4}{x} = \frac{2}{3}$$

$3(x+4) = 2x$

$3x + 12 = 2x$

$-3x \quad -3x$

$\frac{12}{-1} = \frac{-x}{-1}$

$\boxed{x = -12}$

1.) Cross Multiply ✓

2.) Distribute ✓

3.) Add/Sub

4.) Mult/Div

$$\frac{8}{6} = \frac{12}{x-3}$$

$8(x-3) = (6)(12)$

$8x - 24 = 72$

$+24 \quad +24$

$\frac{8x}{8} = \frac{96}{8}$

$\boxed{x = 12}$

$\frac{(6)(12)}{8} = x - 3$

$\frac{72}{8} = x - 3$

$9 = x - 3$

$+3 \quad +3$

$\boxed{12 = x}$