

Math Review Handout #2

The following questions are about a new type of trail mix called "Raisins to the Max" developed by a young scientist named Gad. A bag of this new trail mix contains a ratio of almonds to raisins of 3:7.

- 1) Bob purchased a bag of this trail mix and counted 45 almonds. How many raisins should there be in Bob's bag? Hint: use ratios

$$\frac{3 \text{ almonds}}{7 \text{ raisins}} = \frac{45 \text{ almonds}}{x \text{ raisins}}$$

$$\frac{3}{7} = \frac{45}{x}$$

$$3x = 315$$

$$x = 105$$

Make equivalent ratios matching units. Then identify value of x by seeing pattern or cross multiplying.

- 2) Bobbette purchased an extra large bag of this trail mix as she was so happy to find a trail mix with so many raisins and no chocolate. Her bag contained 170 pieces. How many almonds were there and how many raisins were in her bag?

Almonds	Raisins	Total
3	7	10
5	17	170

$$\frac{3 \text{ almonds}}{10 \text{ total}} = \frac{x \text{ almonds}}{170 \text{ total}}$$

$$3 \cdot 170 = 10x$$

$$510 = 10x$$

$$x = 51$$

$$\frac{7 \text{ raisins}}{10 \text{ total}} = \frac{y \text{ raisins}}{170 \text{ total}}$$

$$7 \cdot 170 = 10y$$

$$1190 = 10y$$

$$y = 119$$

Make a mini table to identify part: whole ratios

Make a factor tree and List the prime factorization for each the following numbers:

3) 48: $48 = 2^4 \cdot 3$

4) 39: $39 = 3 \cdot 13$

5) 250: $250 = 2 \cdot 5^3$

- 6) What do the letter GCF stand for? Greatest Common Factor

- 7) List 3 factors for the number 20: 1, 2, 4, 5, 10, 20

- 8) List 3 multiples for the number 20: 20, 40, 60, 80, 100, 120...

9) What is the GCF for the numbers: 24 and 56

Method 1: List factors & identify biggest

$24 = 1, 2, 3, 4, 6, 8, 12, 24$
 $56 = 1, 2, 4, 7, 8, 14, 28, 56$

Method 2: List prime factors

$24 = 2 \cdot 2 \cdot 2 \cdot 3$
 $56 = 2 \cdot 2 \cdot 2 \cdot 7$
 $2 \cdot 2 \cdot 2 = 8$ (GCF)

Method 3: Upside down cake

2	24	56
2	12	28
2	6	14
3	2	7

$2 \cdot 2 \cdot 2 = 8$ (GCF)

- 10) What is the GCF for the numbers 60, 80, and 100

2	60	80	100
2	30	40	50
5	15	20	25
3	4	5	

$2 \cdot 2 \cdot 5 = 20$ (GCF)

- 11) A water cooler has 46 cups of water. If a serving is $\frac{3}{4}$ of a cup how many servings are in the cooler?

$46 \div \frac{3}{4}$
 Keep, change, Flip
 $46 \cdot \frac{4}{3} = \frac{184}{3}$
 $61 \frac{1}{3}$ servings

Fraction of a number means multiply

12) $\frac{3}{5}$ of the student body at a school read one book a month. If there are 400 students, how many of them read one book a month?

← cross simplify & divide 5 and 400 by 5

$$\frac{3}{5} * \frac{400}{1} = \frac{240}{1} \text{ or } 240 \text{ students}$$

13) Belinda went to the store and purchased a 9 pounds bag of oranges for \$4. What is the cost per pound (unit rate)?

$$\frac{\$4}{9 \text{ pounds}} = \frac{\$0.44}{1 \text{ pound}}$$

← $0.444 \dots$

$$9 \overline{) 4.000}$$

$$\begin{array}{r} 4.000 \\ -36 \\ \hline 40 \\ -36 \\ \hline 40 \\ -36 \\ \hline 4 \end{array}$$

$\$0.44 \text{ per pound}$

14) 9 is 20% of what number?

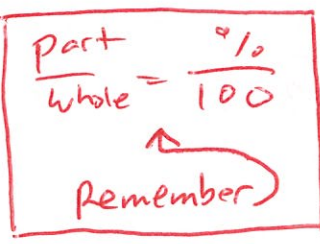
$P = 9$
 $W = X$
 $\% = 20$

$$\frac{9}{X} = \frac{20}{100}$$

$$9 \cdot 100 = 20 \cdot X$$

$$\frac{900}{20} = \frac{20X}{20}$$

$45 = X$



15) 16 is what percent of 40?

$P = 16$
 $W = 40$
 $\% = X$

 ~~$\frac{16}{40} = \frac{X}{100}$~~

$$\frac{16 \cdot 100 = 40X}{\frac{1600}{40} = \frac{40X}{40}}$$

$40 = X$

$$40 \overline{) 1600}$$

$$\begin{array}{r} 40 \\ -160 \\ \hline 00 \\ -00 \\ \hline 0 \end{array}$$

16) Write the coordinates of the following:

- A: $(-2, 3)$
- B: $(3, 2)$
- C: $(1, -1)$
- D: $(3, -1)$
- E: $(-2, -4)$

Plot the following on the graph:
 F (4, 1) G (0, -3)
 H (-1, 4) I (-4, -2)

