Pre-Algebra – Summer Math Packet

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Number Relationships & Computation
Objective: Add, subtract, and multiply positive fractions and mixed numbers. - **A**
Examples:

- **To add unlike fractions (fractions with different denominators), rename the fractions so there is a common denominator.**

Add: $\frac{1}{6}+\frac{2}{5}=$

$\frac{1}{6}=\frac{1\bullet 5}{6\bullet 5}=\frac{5}{30}$ $\quad\frac{2}{5}=\frac{2\bullet 6}{5\bullet 6}=\frac{12}{30}$

$\frac{5}{30}+\frac{12}{30}=\frac{17}{30}$

Add: $12\frac{1}{2}+8\frac{2}{3}=$ $\quad 12\frac{1}{2}=12\frac{1\bullet 3}{2\bullet 3}=12\frac{3}{6}$ $\quad 8\frac{2}{3}=8\frac{2\bullet 2}{3\bullet 2}=8\frac{4}{6}$

$12\frac{3}{6}+8\frac{4}{6}=20\frac{7}{6}$ $\quad\frac{7}{6}$ is improper so we must change it to proper. 7 divided by 6 = $1\frac{1}{6}$

$20+1\frac{1}{6}=21\frac{1}{6}$

1.) Add: $\frac{1}{3}+\frac{1}{9}$

2.) Add: $7\frac{4}{9}+10\frac{2}{9}$

3.) Add: $1\frac{5}{9}+4\frac{1}{6}$

4.) Add: $2\frac{1}{2}+2\frac{2}{3}$

5.) A quiche recipe calls for $2\frac{3}{4}$ cups of grated cheese. A recipe for quesadillas requires $1\frac{1}{3}$ cups of grated cheese. What is the total amount of grated cheese needed for both recipes?

6.) You want to make a scarf and matching hat. The pattern calls for $1\frac{7}{8}$ yards of fabric for the scarf and $2\frac{1}{2}$ yards of fabric for the hat. How much fabric do you need in all?

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On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Number Relationships & Computation

Objective: Add, **subtract**, and multiply positive fractions and mixed numbers. - **B**

Examples:

- **To subtract unlike fractions (fractions with different denominators), rename the fractions so there is a common denominator.**

Subtract: $\frac{7}{8}-\frac{1}{2}=$ $\frac{7}{8}=\frac{7\bullet1}{8\bullet1}=\frac{7}{8}$ $\frac{1}{2}=\frac{1\bullet4}{2\bullet4}=\frac{4}{8}$ $\frac{7}{8}-\frac{4}{8}=\frac{3}{8}$

Subtract: $5\frac{3}{4}-2\frac{1}{3}=$ $5\frac{3}{4}=5\frac{3\bullet3}{4\bullet3}=5\frac{9}{12}$ $2\frac{1}{3}=2\frac{1\bullet4}{3\bullet4}=2\frac{4}{12}$

$5\frac{9}{12}-2\frac{4}{12}=3\frac{5}{12}$

**Note: If you have to borrow from the whole number change to improper fractions, find a common denominator, subtract, and then change back to proper fractions.

1.) Subtract: $\frac{9}{10}-\frac{1}{10}$

2.) Subtract: $\frac{2}{3}-\frac{1}{6}$

3.) Subtract: $9\frac{7}{10}-4\frac{3}{5}$

4.) Subtract: $5\frac{3}{8}-4\frac{11}{12}$

*Hint: Change to improper fractions first!

5.) Melanie had $4\frac{2}{3}$ pounds of chopped walnuts. She used $1\frac{1}{4}$ pounds in a recipe. How many pounds of chopped walnuts did she have left?

6.) Lois has $3\frac{1}{3}$ pounds of butter. She uses $\frac{3}{4}$ pound in a recipe. How much does she have left? *Hint: Change to improper fractions first.

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On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Number Relationships & Computation
Objective: Add, subtract, and **multiply** positive fractions and mixed numbers. - **C**
Examples:

- **To multiply fractions – Multiply the numerators & denominators.**
- **Be sure to change mixed numbers to improper fractions before multiplying.**

$$\frac{1}{3} \bullet \frac{5}{8} = \frac{5}{24}$$

$$1\frac{1}{3} \bullet 3\frac{2}{5} = \frac{4}{3} \bullet \frac{17}{5} = \frac{68}{15} = 4\frac{8}{15}$$

**Remember: Changing mixed numbers to improper fractions. $2\frac{3}{4} = 4 \bullet 2 + 3 = \frac{11}{4}$

$$1\frac{1}{3} \bullet 21 = \frac{4}{3} \bullet \frac{21}{1} = \frac{4 \bullet 21}{3 \bullet 1} = \frac{84}{3} = 28$$

1.) $\frac{2}{3} \bullet \frac{4}{5} =$

2.) $\frac{7}{3} \bullet 4\frac{1}{2} =$

3.) $2\frac{1}{2} \bullet 2\frac{1}{3} =$

4.) $3 \bullet 5\frac{2}{9} =$

5.) Anna wants to make 4 sets of curtains. Each set requires $5\frac{1}{8}$ yards of fabric. How much fabric does she need?

6.) One sixth of the students at a local college are seniors. The number of freshmen students is $2\frac{1}{2}$ times that amount. What fraction of the students are freshmen?

Pre-Algebra – Summer Math Packet

Unit: Knowledge of Number Relationships & Computation
Objective: Determine equivalent forms of rational numbers expressed as **fractions**, decimals, **percents, and ratios**.- B
Examples:

A RATIO is a comparison of two numbers by division. When a ratio compares a number to 100, it can be written as a PERCENT. To write a ratio or fraction as a percent, find an equivalent fraction with a denominator of 100. You can also use the meaning of percent to change percents to fractions.

Write $\frac{19}{20}$ **as a percent.**

$$\frac{19}{20}\frac{\bullet 5}{\bullet 5}=\frac{95}{100}=95\%$$ **Since 100 ÷ 20 = 5, multiply the numerator and denominator by 5.**

Write 92% as a fraction in simplest form.

$$\frac{92}{100}=\frac{\div 4}{\div 4}=\frac{23}{25}$$

Write 92% as a decimal. **Move decimal two places to the left. Add zeros if needed.** **92.0% = 0.92**

Write 0.4 as a percent. **Move decimal two places to the right. Add zeros if needed.** **0.4 = 40%**

1.) Write $\frac{7}{25}$ as a percent and decimal.	**2.)** Write 19% as a decimal and fraction in simplest form.
3.) Write $\frac{9}{50}$ as a percent and decimal.	**4.)** Write 75% as a decimal and fraction in simplest form.
5.) Ms. Crest surveyed her class and found that 15 out of 30 students brushed their teeth more than twice a day. Write this ratio as a fraction in simplest form, then write it as a % and a decimal.	**6.)** A local retail store was having a sale and offered all their merchandise as a 25% discount. Write this percent as a fraction in simplest form, then write it as a decimal.

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Pre-Algebra – Summer Math Packet

Unit: Knowledge of Number Relationships & Computation
Objective: Compare, order, and describe rational numbers.
Examples:

- **RATIONAL numbers include fractions, decimal, and percents. To COMPARE or ORDER rational numbers, they must be in the same form (all fraction or all decimals, or all %s)**

Example: Order 0.6, 48%, and $\frac{1}{2}$ from least to greatest.

Step 1 – Change all to decimals. **0.6** **48% = 0.48** $\frac{1}{2}$ **= 0.5**

Step 2 – Compare decimals & Order. **0.48, 0.5, 0.6**

Step 3 – Write using original form. **48%,** $\frac{1}{2}$**, 0.6**

1.) Order from least to greatest.

22%, 0.3, $\frac{1}{5}$

2.) Order from least to greatest.

0.74, $\frac{3}{4}$, 70%

3.) Replace ◯ with <, > , or =.

$\frac{7}{12}$ ◯ 58%

4.) Which is the largest?

$1\frac{3}{8}$ $1\frac{3}{10}$ $1\frac{4}{9}$

5.) According to the Pet Food Manufacturer's Association, 11 out of 25 people own large dogs and 13 out of 50 medium dogs. Do more fraction of people own large or medium dogs?

6.) Your PE teacher asked you to run for specific time period. You ran 0.6 of the time. Two of your friends ran $\frac{7}{10}$ and 72% of the time. Order the amount of time you and your friends ran from least to greatest.