

June 19, 2015

Dear 6th Grade Parents and Students,

We all know that over the summer, mathematical skills are often weakened which may result in a setback at the beginning of the school year. To avoid the need to play “catch-up” in the fall, an assignment has been prepared to help the students maintain their skills. This assignment is made up of concepts that have been taught in sixth grade and will provide students a thorough review of skills needed for seventh grade. It is important that this packet be completed to the best of their ability. The objective of this assignment is to help them succeed in the next school year.

All questions must have work to support the answers. Work can be done on the question paper, if work space is available. If not, work should be completed on loose leaf and attached to question paper. Do not squeeze work into a tiny area. Any assignment without work will be considered an incomplete assignment. This packet along with any loose leaf used to show work is to be placed in a folder and submitted on the first day of school.

Thank you for your cooperation. Have a great summer!

Sincerely,

Mrs. Kwan

**Summer Math Packet
(6X – Mrs. Kwan)**

Name _____

Divide Decimals Hints/Guide:

Move the decimal point in the divisor (number outside the division box) until it is a whole number.

Move the decimal point in the dividend (number inside the division box) the same number of spaces.

Put the decimal point on the top of the division box.

Divide the numbers.

Example: $1.692 \div 23.5$ (Remember the first number goes inside the division box.)

$$\begin{array}{r} 0.072 \\ 235 \overline{) 169.20} \\ \underline{-1645} \\ 470 \\ \underline{-470} \\ 0 \end{array}$$

move the decimal in the divisor to the box (1 space)

move the decimal inside the box the same number of spaces (1 space)

Exercises: Divide the decimals. Show all work. Do not use a calculator.

1. $14.04 \div 0.52$

2. $6.93 \div 0.21$

3. $27.95 \div 0.43$

4. $0.2944 \div 0.032$

5. $0.4615 \div 7.1$

6. $7.626 \div 9.3$

7. $167.4 \div 0.062$

8. $7.31 \div 0.017$

ADDING FRACTIONS & MIXED NUMBERS (Show your work on loose leaf.)

Step 1: Change to a common denominator (Write the expression horizontally with a common denominator to add or subtract. Remember there is no need to change mixed numbers to improper fractions to add or subtract.)

Step 2: Add fractions

Step 3: Add whole numbers (if applicable)

Step 4: Simplify

Step 5: Check your answer by computing vertically on the right side of your loose leaf

$$1) \frac{1}{2} + \frac{1}{4} =$$

$$2) \frac{2}{3} + \frac{5}{9} =$$

$$3) \frac{5}{9} + \frac{5}{6} =$$

$$4) 6\frac{2}{3} + 5\frac{1}{2} =$$

$$5) 4\frac{1}{3} + 3\frac{3}{4} =$$

$$6) 5\frac{5}{6} + 4\frac{2}{3} =$$

$$7) 4\frac{3}{4} + 6\frac{1}{2} =$$

SUBTRACTING FRACTIONS & MIXED NUMBERS (Show your work on loose leaf.)

Step 1: Change to a common denominator (Write the expression horizontally with a common denominator to add or subtract. Remember there is no need to change mixed numbers to improper fractions to add or subtract.)

Step 2: Regroup (if necessary)

Step 3: Subtract

Step 4: Simplify

Step 5: Check your answer by computing vertically on the right side of your loose leaf

$$8) \frac{3}{4} - \frac{1}{5} =$$

$$9) \frac{3}{4} - \frac{8}{15} =$$

$$10) \frac{9}{10} - \frac{3}{5} =$$

$$11) 7\frac{3}{4} - 4\frac{1}{6} =$$

$$12) 5\frac{3}{8} - 4\frac{3}{4} =$$

$$13) 17\frac{1}{3} - 8\frac{1}{2} =$$

$$14) 16 - 7\frac{2}{3} =$$

MULTIPLYING FRACTIONS & MIXED NUMBERS (Show your work – use another piece of paper, if you need more room)

Step 1: Write mixed numbers and whole numbers as improper fractions (if applicable)

Step 2: Remember to look for cancellations

$$15) \frac{3}{4} \times \frac{4}{9} =$$

$$16) \frac{3}{4} \times \frac{2}{5} =$$

$$17) 24 \times \frac{5}{6} =$$

$$18) 2\frac{1}{4} \times \frac{1}{2} =$$

$$19) 3\frac{2}{3} \times 2\frac{3}{4} =$$

$$20) 2\frac{3}{8} \times 4\frac{7}{8} =$$

$$21) 2\frac{2}{7} \times 3\frac{1}{8} =$$

DIVIDING FRACTIONS & MIXED NUMBERS (Show your work – use another piece of paper, if you need more room)

Step 1: Write mixed numbers and whole numbers as improper fractions (if applicable)

Step 2: Change the division to multiplication by the reciprocal of the divisor

Step 3: Look for cancellations

$$22) \frac{6}{7} \div \frac{3}{7} =$$

$$23) \frac{3}{4} \div \frac{1}{2} =$$

$$24) 10 \div \frac{5}{6} =$$

$$25) 8 \div 2\frac{1}{4} =$$

$$26) 7\frac{2}{3} \div 1\frac{1}{6} =$$

$$27) 9\frac{2}{3} \div 2\frac{1}{6} =$$

$$28) 5\frac{7}{8} \div 1\frac{3}{4} =$$

SOLVING PROPORTIONS: (Show your work – use another piece of paper, if you need more room)

EXAMPLE

$$\frac{10}{x} = \frac{4}{6}$$

Use the Cross-Products Rule

$$4x = 10 \cdot 6$$

Divide both sides by 4 and
look for cancellations

$$\frac{4x = \overset{5}{\cancel{10}} \cdot \overset{3}{\cancel{6}}}{4 \quad \cancel{4} \quad \cancel{2} \quad 1}$$

solve for x

$$x = 15$$

1) $\frac{2}{5} = \frac{x}{10}$

2) $\frac{1}{3} = \frac{z}{15}$

3) $\frac{3}{8} = \frac{s}{16}$

4) $\frac{4}{r} = \frac{1}{4}$

5) $\frac{10}{h} = \frac{5}{6}$

6) $\frac{w}{9} = \frac{6}{18}$

7) $\frac{t}{8} = \frac{3}{4}$

8) $\frac{k}{5} = \frac{9}{15}$

9) $\frac{2}{9} = \frac{4}{c}$

10) $\frac{21}{k} = \frac{7}{4}$

Solving Proportions

Solve each proportion. Leave your answer as a fraction in simplest form.

1) $\frac{6}{2} = \frac{4}{p}$

2) $\frac{4}{k} = \frac{8}{2}$

3) $\frac{n}{4} = \frac{8}{7}$

4) $\frac{5}{3} = \frac{x}{4}$

5) $\frac{m}{5} = \frac{7}{2}$

6) $\frac{7}{4} = \frac{r}{5}$

7) $\frac{7}{6} = \frac{5}{x}$

8) $\frac{6}{5} = \frac{2}{5n}$

Solve each proportion. Round your answers to the nearest hundredth.

9) $\frac{7.7}{3.6} = \frac{2.3}{b}$

10) $\frac{v}{4.9} = \frac{5.4}{6.1}$

11) $\frac{6.3}{x} = \frac{2.56}{9.3}$

12) $\frac{3.4}{x} = \frac{2.17}{7.7}$

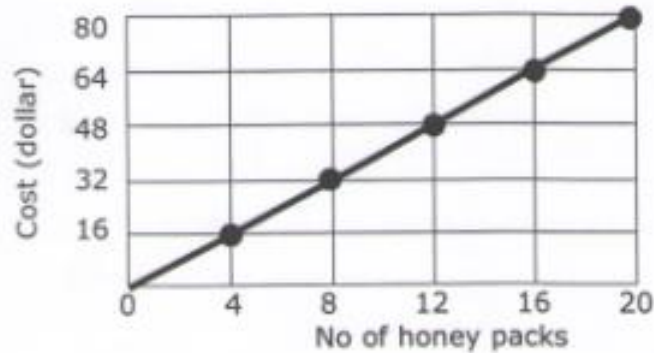
Name _____

Date _____

Graphs of Proportional Relationship - Guided Lesson

Complete the following problems:

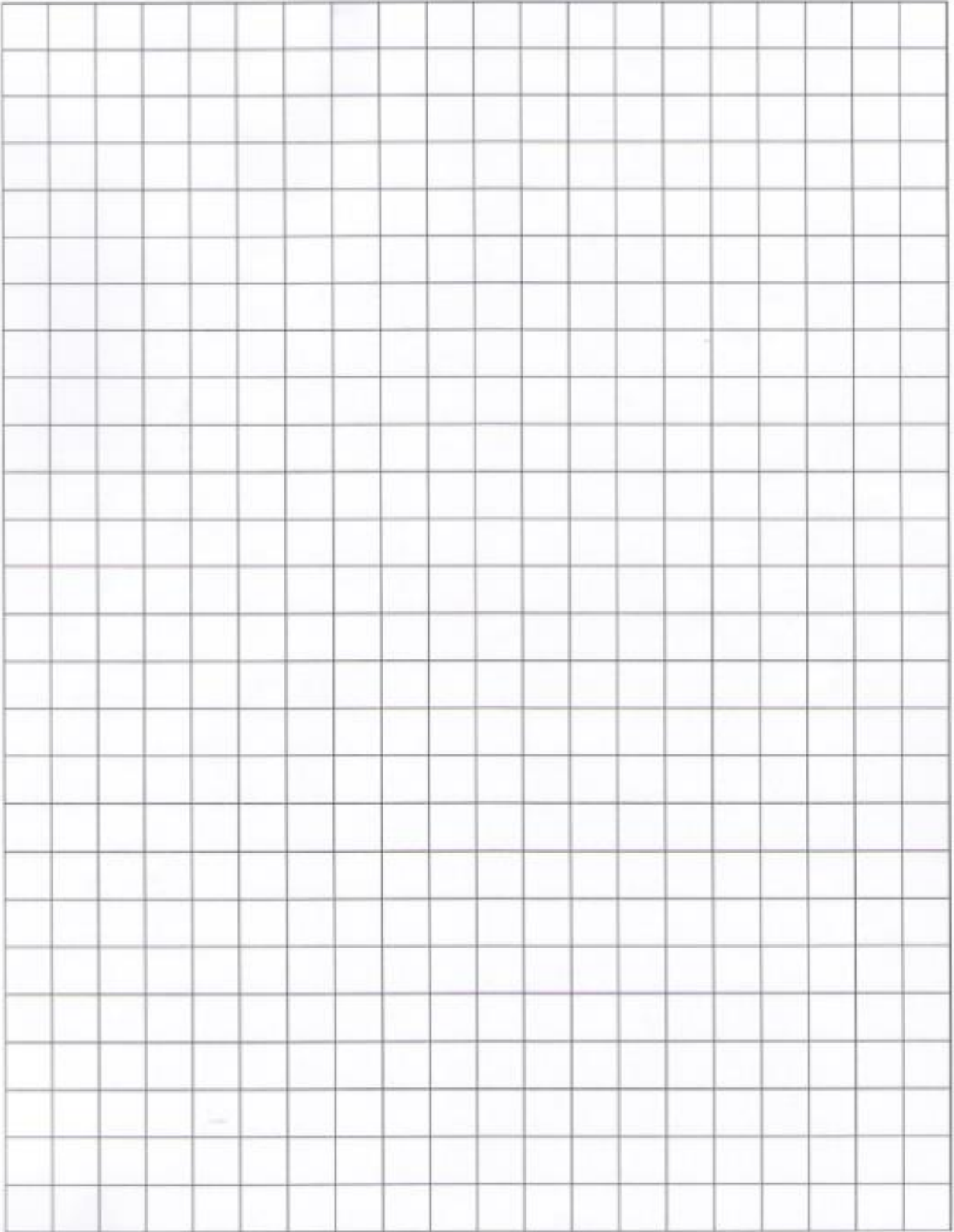
- 1) The graph below represents the cost of packs of honey as a unit rate of \$4 dollars for every pack of honey. The unit rate is represented as \$4/pack. Represent the relationship using a table and an equation.



- 2) Andrew brought packs of biscuit. Create a graph to determine if the number of packs and price are proportional for each serving size listed in the table. If the quantities are proportional, what is the constant of proportionality or unit rate that defines the relationship? Explain how the constant of proportionality was determined and how it relates to both the table and graph.

Data	1	2	3	4
Packed of Biscuit	1	2	3	4
Price	8	16	24	32

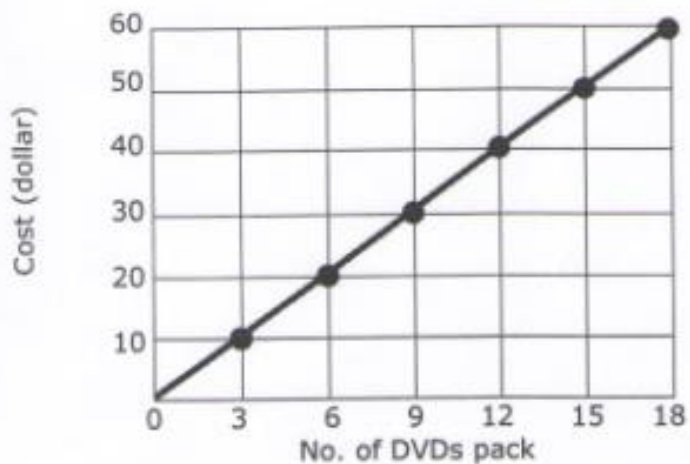




Name _____

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3) The graph below represents the cost of DVD packs at a unit rate of \$3 dollars for every pack of DVDs. The unit rate is represented as \$3/pack. Represent the relationship using a table and an equation.





Solve each problem. Answer as a mixed number (if possible).

- 1) A machine made $3\frac{4}{6}$ pencils in $\frac{3}{4}$ of a minute. It made pencils at a rate of how many per minute?
- 2) A cookie recipe called for $3\frac{1}{4}$ cups of sugar for every $\frac{1}{3}$ cup of flour. If you made a batch of cookies using 1 cup of flour, how many cups of sugar would you need?
- 3) A carpenter goes through $3\frac{1}{2}$ boxes of nails finishing $\frac{3}{5}$ of a roof. How much would he use finishing the entire roof?
- 4) A chef had to fill up $\frac{3}{5}$ of a container with mashed potatoes. He ended up using $3\frac{3}{5}$ pounds of mashed potatoes. How many pounds would he use if he had to fill up the entire container?
- 5) A tire shop had to fill $3\frac{2}{4}$ tires with air. It took a small air compressor $2\frac{3}{5}$ seconds to fill them up. How long would it take to fill 9 tires?
- 6) It takes $3\frac{4}{6}$ gallons of water to fill up $2\frac{2}{3}$ containers. How much water would it take to fill 5 containers?
- 7) A bag with $3\frac{1}{2}$ quarts of peanuts can make $3\frac{2}{6}$ jars of peanut butter. How many quarts of peanuts would you need to make 2 jars?
- 8) A printer cartridge with $3\frac{1}{4}$ milliliters of ink will print off $2\frac{1}{2}$ reams of paper. How many milliliters of ink will it take to print 8 reams?
- 9) It takes $3\frac{4}{5}$ kilometers of thread to make $3\frac{2}{6}$ boxes of shirts. How many kilometers of thread will it take to make 9 boxes?
- 10) It takes $2\frac{3}{4}$ spoons of chocolate syrup to make $\frac{5}{6}$ of a gallon of chocolate milk. How many spoons of syrup would it take to make 1 gallon of chocolate milk?

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____



Solve each problem.

- Ex) Every pint is 2 cups. Write an equation to express the total number of cups (Z) in (y) pints.
- 1) For each pound there are 16 ounces. Write an equation to express the total number of ounces (Z) in (y) pounds.
 - 2) Every dollar is 10 dimes. Write an equation to express the total number of dimes (Z) in (y) dollars.
 - 3) Every dollar is 4 quarters. Write an equation to express the total number of quarters (Z) in (y) dollars.
 - 4) Every foot is 12 inches. Write an equation to express the total number of inches (Z) in (y) feet.
 - 5) Every meter is 100 centimeters. Write an equation to express the total number of centimeters (Z) in (y) meters.
 - 6) For each kilogram there are 1,000 grams. Write an equation to express the total number of grams (Z) in (y) kilograms.
 - 7) Every dollar is 100 pennies. Write an equation to express the total number of pennies (Z) in (y) dollars.
 - 8) Every kilometer is 1,000 meters. Write an equation to express the total number of meters (Z) in (y) kilometers.
 - 9) Every cup is 8 ounces. Write an equation to express the total number of ounces (Z) in (y) cups.
 - 10) Every quarter is 5 nickels. Write an equation to express the total number of nickels (Z) in (y) quarters.
 - 11) Every gallon is 4 quarts. Write an equation to express the total number of quarts (Z) in (y) gallons.
 - 12) Every centimeter is 10 millimeters. Write an equation to express the total number of millimeters (Z) in (y) centimeters.
 - 13) Every quart is 2 pints. Write an equation to express the total number of pints (Z) in (y) quarts.
 - 14) Every yard is 3 feet. Write an equation to express the total number of feet (Z) in (y) yards.
 - 15) Every quarter is 25 pennies. Write an equation to express the total number of pennies (Z) in (y) quarters.

Answers

Ex. $y \times 2 = Z$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

One-Step Equations With Integers

Solve each equation.

1) $v - 10 = -9$

2) $v - 10 = -3$

3) $x - 3 = 4$

4) $\frac{x}{5} = 2$

5) $22 = -11k$

6) $-13m = -377$

7) $b - 7 = -1$

8) $-8 = p - 13$

9) $-40 = -5p$

10) $418 = -22a$

11) $\frac{a}{29} = 5$

12) $-2 = \frac{m}{16}$

13) $x - 11 = 16$

14) $-10 = x - 21$

One-Step Equation Word Problems

- 1) Lisa is cooking muffins. The recipe calls for 7 cups of sugar. She has already put in 2 cups. How many more cups does she need to put in?
- 2) At a restaurant, Mike and his three friends decided to divide the bill evenly. If each person paid \$13 then what was the total bill?
- 3) How many packages of diapers can you buy with \$40 if one package costs \$8?
- 4) Last Friday Trevon had \$29. Over the weekend he received some money for cleaning the attic. He now has \$41. How much money did he receive?
- 5) Last week Julia ran 30 miles more than Pranav. Julia ran 47 miles. How many miles did Pranav run?
- 6) How many boxes of envelopes can you buy with \$12 if one box costs \$3?
- 7) Amanda and her best friend found some money buried in a field. They split the money evenly, each getting \$24.28. How much money did they find?
- 8) Jenny wants to buy an MP3 player that costs \$30.98. How much change does she receive if she gives the cashier \$40?

9) Last Friday Adam had \$22.33. Over the weekend he received some money for cleaning the attic. He now has \$32. How much money did he receive?

10) After paying \$5.12 for a salad, Norachai has \$27.10. How much money did he have before buying the salad?

11) A recipe for cookies calls for $3\frac{1}{4}$ cups of sugar. Amy has already put in $3\frac{1}{9}$ cups. How many more cups does she need to put in?

12) Your mother gave you \$13.32 with which to buy a present. This covered $\frac{3}{5}$ of the cost. How much did the present cost?

13) If the weight of a package is multiplied by $\frac{5}{7}$ the result is 40.5 pounds. Find the weight of the package.

14) A stray dog ate 12 of your muffins. That was $\frac{3}{10}$ of all of them! With how many did you start?

Solve and check.

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Solve and check.

$$n \frac{h}{4} - 4 = 12$$

$$n \frac{a}{9} + 8 = 17$$

$$n \frac{6}{9} + 4 = 11$$

$$n \frac{t}{7} + 17 = 21$$

$$n \frac{b}{16} + 8 = 23$$

$$n \frac{x}{4} + 7 = 13$$

$$n \frac{m}{9} - 7 = 12$$

$$n 2s - 8 = 22$$

$$n 8m + 8 = 72$$

$$m 9a + 11 = 47$$

Two-step Equations Word Problems

Write an equation to solve.

1. 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?
2. Aliyah had \$24 to spend on seven pencils. After buying them she had \$10. How much did each pencil cost?
3. You bought a magazine for \$5 and four erasers. You spent a total of \$25. How much did each eraser cost?
4. Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?
5. For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip?