Name_____

INCOMING

6 grade students

Dear Students ☺

Summer is a time to relax and have fun but it is also a great time to stay sharp on your math problem solving skills.

Due to the cumulative nature of mathematics, in order for you to be successful in the coming academic school year, you should be up to date on your prerequisite math skills.

Here's what to do:

- Print out the packet
- Work on it throughout the summer
- Show all of your work right on the packet
- CALCULATORS ARE NOT ALLOWED

You will receive an extra credit grade for the entire packet. This will be your fist grade of the year.

Remember to bring this packet on the first week of school and give it to your math teacher.

In case you need a little extra help, visit these websites:

- http://www.classzone.com
- http://khanacademy.org
- http://www.purplemath.com
- http://www.mathdrills.com

Explain and justify procedures for multiplying and dividing fractions and decimals.

1. Mia made four mosaic designs that used $\frac{2}{5}$ of a package of tiles for each design. Which model shows how many packages of tiles were used?
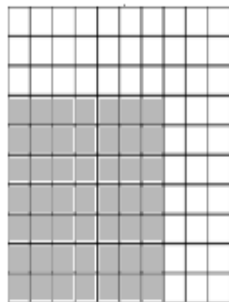
   A.

   B.

   C.

   D.
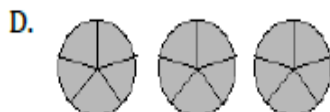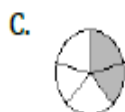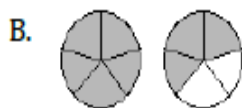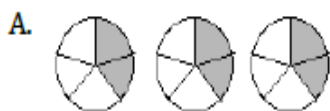
2. Use the blocks below to model how to find the quotient of $2 \div \frac{1}{5}$.

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   Answer: $2 \div \frac{1}{5} =$ _____

3. The 10-by-10 grid model shown below represents which number sentence?

   F. $0.05 \cdot 0.05$

   G. $0.06 \cdot 0.06$

   H. $0.07 \cdot 0.07$

   I. $0.07 \cdot 0.06$

4. The base ten blocks shown below represent which number sentence?

   A. $2 \cdot 0.3 = 0.6$

   B. $2 \cdot 0.3 = 2.2$

   C. $2 \cdot 1.3 = 6.2$

   D. $2 \cdot 1.3 = 2.6$

Multiply and divide fractions and decimals efficiently.

1. Find the product.

   $$4 \cdot 2.1$$

   A. 2.5

   B. 6.1

   C. 8.4

   D. 6.4

2. Gridded Response

   Find the product.

   $$6 \cdot 0.24$$

3. Find the product.

   $$2.7 \cdot 0.3$$

   F. 3.0

   G. 0.81

   H. 2.4

4. Find the product.

   $$12.3 \cdot 0.2$$

   A. 2.46

   B. 12.1

   C. 24.6

   D. 1.21

5. Find the product.

   $$31.2 \cdot 0.5$$

   F. 30.7

   G. 31.7

   H. 150

   I. 15.6

Solve real-world problems involving multiplication and division of fractions and decimals.

1. Stacey has a bag containing $3\frac{3}{4}$ cups of candy. She needs to prepare $\frac{1}{4}$ cup servings for a party. How many servings can be prepared?

   A. 10

   B. 15

   C. 25

   D. 30

2. Ann's recipe for sugar cookies calls for $1\frac{1}{4}$ cups of sugar. How many cups of sugar will Ann need if she wants to double the recipe?

   F. $2\frac{1}{4}$

   G. $2\frac{3}{4}$

   H. $1\frac{3}{4}$

   I. $2\frac{1}{2}$

3. **Gridded Response**

   A frozen turkey sells for $1.29 per pound. In dollars, how much will Greg pay for a turkey that weighs 24.6 pounds?

4. Hayden has a length of rope that measures 23.8 yards. He needs to cut sections of 1.4 yards. How many sections of the rope can he cut?

   A. 15

   B. 16

   C. 17

   D. 18

Use reasoning about multiplication and division
to solve ratio and rate problems.

For 1-5, the local fruit and vegetable stand has the following specials this week.

Seedless Watermelon: 2 for $7.00
Peaches: 7 for $3.50
Kiwi: 1 dozen for $5.40
Green Peppers: 6 for $3.48
Sweet Potatoes: 3 pounds for $7.50
Broccoli: 2 bunches for $4.50

1. How much will 5 pounds of sweet potatoes cost?

   A. $10.50

   B. $11.25

   C. $12.25

   D. $12.50

2. What is the cost for 2 dozen kiwi?

   F. $2.70

   G. $10.80

   H. $11.40

   I. $12.50

3. **Gridded Response**

   In dollars, what is the cost for one seedless watermelon?

4. What is the total price for 4 green peppers?

   A. $1.74

   B. $1.26

   C. $2.32

   D. $2.90

5. How much will 3 peaches and 1 bunch of broccoli cost?

   F. $2.25

   G. $4.50

   H. $3.75

   I. $2.75

Interpret and compare ratios and rates.

For 1-3, a bag of marbles contains 4 black, 5 blue, 1 white, 2 yellow, and 3 green marbles.

1. What is the ratio of the number of black marbles to the number of yellow marbles?

   A. 2:1

   B. 1 to 5

   C. 1:4

   D. 1 to 2

2. What is the ratio of the number of blue marbles to the total number of marbles?

   Answer: _____

3. What is the ratio of the number of green marbles to the number of non-green marbles?

   F. 3:10

   G. 1 to 3

   H. 1:2

   I. 1 to 4

4. Grapes cost $2.73 for 3 pounds at Store A and $3.56 for 4 pounds at Store B. Which store has the grapes at the lowest price?

   A. Store A

   B. Store B

   C. The prices are the same.

   D. Grapes cost $0.90 per pound.

5. What is the rate of miles per gallon, if Steven traveled 207 miles on 9 gallons of gas?

   Answer: _____

Write and evaluate mathematical expressions that correspond to given situations.

1. Danika has 4 cookies less than Evan. If Evan has c cookies, which expression represents the amount of cookies Danika has?

   A. $4c$

   B. $c + 4$

   C. $c - 4$

   D. $\dfrac{c}{4}$

2. The expression $\dfrac{w}{3} + 4$ represents the amount of money Sadie has based on the amount w her sister Wanda has. How much money does Sadie have if Wanda has $81.00?

   F. $85.00

   G. $35.00

   H. $27.00

   I. $31.00

3. Evaluate the expression $8y^3$, when $y = 2$.

4. At the school store, Jane purchased one notebook for $2.50 and 4 pens priced at $0.75 each. Which expression can be used to find the total amount Jane spent at the school store?

   A. $4(2.50 + 0.75)$

   B. $2.50 + 4 \cdot 0.75$

   C. $0.75 + 4 \cdot 2.50$

   D. $2.50 \cdot 4 \cdot 0.75$

5. **Gridded Response**

   Evaluate $2x^2 - 3x$, when $x = 7$.

Use equivalent forms of fractions, decimals, and percents to solve problems.

1. Complete the chart by filling in the missing values.

Fraction	Decimal	Percent
$\frac{1}{40}$		
	.64	
		35%

2. Frank ate $\frac{3}{8}$ of a pepperoni pizza. What percent of the pizza did he eat?

   A. 37.5%

   B. 0.375%

   C. 3.75%

   D. 375%

3. Express the shaded portion of the model below as a fraction, decimal, and percent.
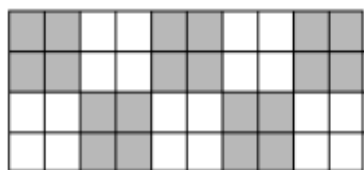
   Answer:_____

4. **Gridded Response**

   Veronica used $\frac{3}{10}$ of a tube of toothpaste and her brother used 25% of the same tube. How much toothpaste is left in the tube? Write your answer as a decimal.

5. The percent of fat in whole milk is 3.25% while the percent of fat in skim milk is 0.5%. What is the difference in the fat content of whole milk and skim milk written as a fraction?

   F. $2\frac{1}{2}$

   G. $2\frac{1}{4}$

   H. $2\frac{3}{4}$

   I. $2\frac{1}{3}$

Estimate the results of computations with fractions, decimals, and percents and judge the reasonableness of the results.

1. Mr. Barton is 58 years old. He spent $\frac{1}{3}$ of his life as a teacher. About how many years has Mr. Barton been a teacher?

   A. 22 years

   B. 20 years

   C. 18 years

   D. 24 years

2. There are 321 sixth graders at Everglades Middle School and 29% of them attended the school dance. Which expression shows how to estimate the number of sixth graders who attended the dance?

   F. $400 \times \frac{3}{10}$

   G. $300 \times \frac{3}{10}$

   H. $400 \times \frac{3}{100}$

   I. $300 \times \frac{3}{100}$

3. Which is the best estimate for the product of 12.04 and 4.88?

   A. 48

   B. 60

   C. 50

   D. 55

4. A triangle has side lengths of $8\frac{1}{4}$, $6\frac{2}{3}$, and 10.35 inches. Which is the best estimate for the perimeter of the triangle?
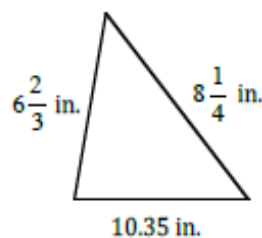
   F. 24 inches

   G. 26 inches

   H. 27 inches

   I. 25 inches

5. A library has 7,211 books in its children's collection and 8% percent of them are biographies. About how many children's biographies are in the library?

   A. 560

   B. 720

   C. 630

   D. 510

Determine the measures of central tendency (mean, median, and mode) and variability (range) for a given set of data.

Use the golf scores below to answer question 1 to 4.

72, 75, 82,

75, 72, 74

1. **Gridded Response**

   What is the mean of the golf scores?

2. What is the median golf score?

   A. 74.5

   B. 74

   C. 75.5

   D. 75

3. What is (are) the mode(s) of the golf scores?

   Answer:_____

4. What is the range in golf scores?

   F. 72

   G. 10

   H. 75

   I. 8

5. Which of the statements describes how to find the mean of a data set?

   A. find the sum of the data and divide the sum by the smallest data value

   B. find the middle number in the data set

   C. find the sum of the two middle numbers in the data set and divide the sum by two

   D. divide the sum of the data by the number of pieces of data

Determine a missing dimension of a plane figure or prism, given its area or volume and some of the dimensions, or <u>determine the area</u> or volume given the dimensions.

1. A Monopoly playing board is in the shape of a square. The sides measure 19 inches. What is the area of the Monopoly board?

   A. 76 in.²

   B. 190 in.²

   C. 361 in.²

   D. 266 in.²

2. A pennant is in the shape of an isosceles triangle.
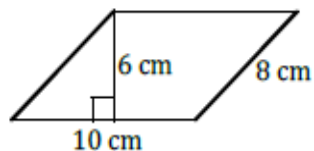
   70 cm

   30 cm
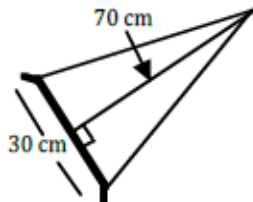
   What is the area of the triangle in square centimeters?

   F. 1050

   G. 525

   H. 2100

   I. 2625

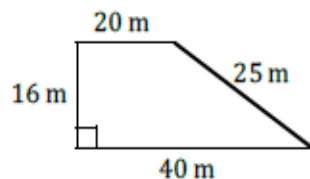3. A circular pizza has a diameter of 18 inches. What is the area of the pizza? Use π = 3.14.

   A. 113.04 in.²

   B. 56.52 in.²

   C. 254.34 in.²

   D. 28.26 in.²

4. What is the area of the parallelogram below?

   6 cm   8 cm

   10 cm

   Answer:_____

5. A piece of land is in the shape of a trapezoid.

   20 m

   16 m   25 m

   40 m

   What is the area of the property?

   F. 960 m²

   G. 101 m²

   H. 750 m²

   I. 480 m²