

Student Name: _____

Vernon Public Schools Grade 5 Mathematics Summer Review Packet



This optional Summer Math Packet consists of problems that review, maintain, and deepen the skills and concepts learned in 6 strands of mathematics: Operations & Computation; Numeration; Patterns, Functions, & Algebra; Data & Chance; Measurement & Reference Frames; and Geometry.

Most problems will consist of three levels, basic, moderate and challenge /extension. Students are able to work in each strand (problem) at the appropriate level.

Challenge/extension problems are more complex and may require outside data and/or assistance.

Do example A by yourself. Do example B with help.

1a. List, in order from least to greatest, all factors for the following numbers.
(Hint: use factor rainbows)

8: _____

16: _____

24: _____

25: _____

49: _____

54: _____

1b. A **square** number is a number whose factor is multiplied by itself to get the product.

Example: $3 * 3 = 9$ (9 is a square number)

$2 * 2 = \underline{\hspace{2cm}}$

$3 * 3 = \underline{\hspace{2cm}}$

$4 * 4 = \underline{\hspace{2cm}}$

$5 * 5 = \underline{\hspace{2cm}}$

$6 * 6 = \underline{\hspace{2cm}}$

$7 * 7 = \underline{\hspace{2cm}}$

$8 * 8 = \underline{\hspace{2cm}}$

$9 * 9 = \underline{\hspace{2cm}}$

$10 * 10 = \underline{\hspace{2cm}}$

Do example A by yourself. Do example B with help.

2a. Read the definition of the terms prime and composite.

Prime is a number whose factors are only one and itself (example: 17 is a prime number because its only factors are 1 & 17).

Composite is number which has more than two factors (example: 15 is a composite number because its factors are 1, 3, 5, 15).

Now show whether each number below is prime or composite by circling the word prime or composite next to the number.

7 is prime composite

12 is prime composite

29 is prime composite

39 is prime composite

51 is prime composite

2b. Count the number of TVs and hones you have in your home.

Their sum is: _____.

Now tell as much as you can about his number.

Circle one:

This number is: odd even

This number is: prime composite

List:

the factors of this number are: _____

four of its multiples are: _____

Do example A by yourself. Do example B with help.

3a. Complete the following patterns:



1, 4, 7, 10, 13, _____, _____, _____, _____, _____, _____

3b. Complete the following patterns:

56, 49, 42, 35, _____, _____, _____, _____

2, 5, 11, 23, _____, _____, _____, . . .

4a. In Miguel's summer school class he takes a quiz each day. In the last two weeks, he has earned the following ten scores.

Miguel's scores: 9, 6, 7, 8, 8, 10, 5, 10, 9, 8

What is the maximum? _____ What is the minimum? _____

What is the range? _____ What is the mode? _____

5a. Measure the following line segments to the nearest quarter inch.

Measure:

Answer:

1. _____

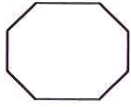

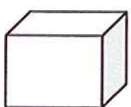
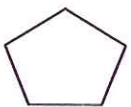
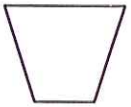
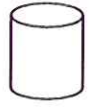
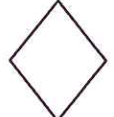
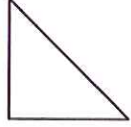

2. _____

3. _____

Do example A by yourself. Do example B with help.

6a. Name the following figures.

6b. Tell whether each is 2- or 3-dimensional.

Shape	Name it.	2-D or 3-D?
		
		
		
		
		
		
		
		
		

Do example A by yourself. Do example B with help.

7a. Rewrite the following factor chains using exponential notation.
Three problems have been done for you.

$$2 * 2 * 2 = 2^3 \quad 3 * 3 = 3^2 \quad 5 * 5 * 5 * 5 = 5^4$$

$$7 * 7 = \underline{\quad} \quad 4 * 4 * 4 = \underline{\quad} \quad 8 * 8 = \underline{\quad}$$

7b. Complete the table, according to the example.

factor chain	exponential notation	standard notation
$4 * 4$	4^2	16
$5 * 5 * 5$		125
	3^4	
$2 * 2 * 2 * 2 * 2$		
	10^3	

8a. Compare the following sets of fractions using $<$, $>$, or $=$.

$$\frac{1}{2} \underline{\quad} \frac{3}{4} \quad \frac{2}{3} \underline{\quad} \frac{4}{6} \quad \frac{1}{4} \underline{\quad} \frac{3}{4}$$

8b. Put the following fractions in order from least to greatest.

$$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{2}{3}, \frac{1}{10}, \frac{3}{3}, \frac{3}{4}$$

_____, _____, _____, _____, _____, _____, _____

Do example A by yourself. Do example B with help.

9a. Complete the following function machine problems.

rule: add 7		rule: subtract 15		rule: multiply by 9	
<u>in</u>	<u>out</u>	<u>in</u>	<u>out</u>	<u>in</u>	<u>out</u>
5	12	25	10	2	18
	18	45		0	
60			95		72
	94		1	3	

9b. Complete the following function machine problems.

rule: divide by 4		rule: multiply by 11		rule: square	
<u>in</u>	<u>out</u>	<u>in</u>	<u>out</u>	<u>in</u>	<u>out</u>
24	6	3	33	5	25
	100	7			144
	64		121	13	
1000	250	9		7	
4			110		10,000

Do example A by yourself. Do example B with help.

10a. Solve, showing all your work.

Remember to line up your place values!

$$526 + 4,231 + 27 = \underline{\hspace{2cm}}$$

$$29,856 - 13,962 = \underline{\hspace{2cm}}$$

$$267 * 8 = \underline{\hspace{2cm}}$$

$$7,625 / 5 = \underline{\hspace{2cm}}$$

$$32.94 + 116.78 = \underline{\hspace{2cm}}$$

$$9,873.21 - 4,926.35 = \underline{\hspace{2cm}}$$

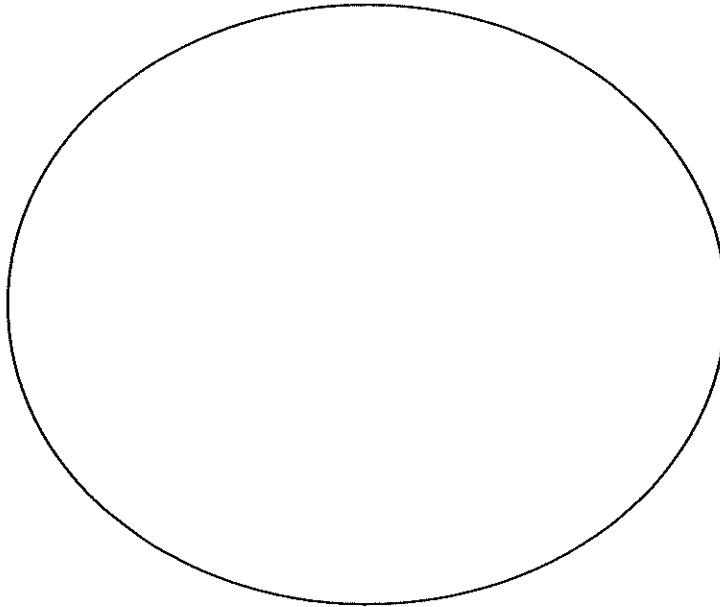
Do example A by yourself. Do example B with help.

11a. Use the picture and the directions below to solve the problems.

Divide the pizza to the right into 12 equal pieces.

Label the pieces as follows:

<u>pieces</u>	<u>toppings</u>
3	<i>sausage</i>
2	<i>pepperoni</i>
2	<i>sausage & pepperoni</i>
2	<i>extra cheese</i>
2	<i>sausage & black olive</i>
1	<i>veggie</i>



11b. What fraction of the pizza can be eaten by a vegetarian? _____

What fraction of the pizza has only 1 kind of topping? _____

What fraction of the pizza has meat as a topping? _____

Do example A by yourself. Do example B with help.

12a. Express the following using scientific notation.
The first three problems have been done for you.

$$70 = 7 * 10^1 \quad 700 = 7 * 10^2 \quad 7000 = 7 * 10^3$$

$$50 = \underline{\hspace{2cm}} \quad 500 = \underline{\hspace{2cm}} \quad 5000 = \underline{\hspace{2cm}}$$

$$90 = \underline{\hspace{2cm}} \quad 900 = \underline{\hspace{2cm}} \quad 9000 = \underline{\hspace{2cm}}$$

13a. Use the grid and the information provided to answer the questions.

Mile Race on Track & Field Day

	1 st	2 nd	3 rd	4 th	5 th
Sam					
Kelly					
Monica					
Jeff					
Eric					

- None of the boys won the race
- Kelly was faster than Jeff, but not Sam.
- Jeff was relieved that his time was not the slowest.
- At the finish line, the winner glanced back at the boy who was only a few paces behind.

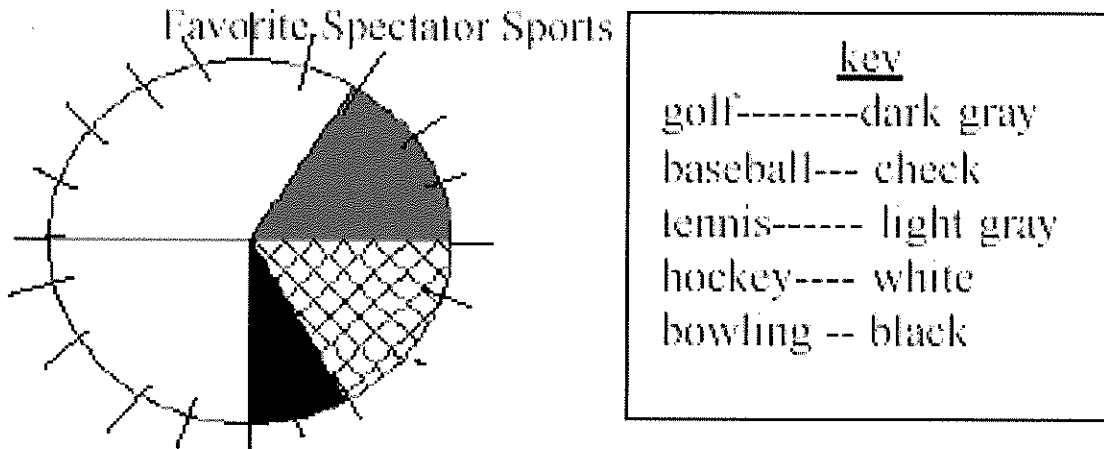
Who came in first place? _____

Who finished the race last? _____

Give the complete order in which the racers finished.

Do example A by yourself. Do example B with help.

14a.



According to the pie graph, what percent of people questioned prefer watching:

golf? _____ *baseball?* _____

tennis? _____ *hockey?* _____

bowling? _____

15a. At your favorite music store, you find 3 CDs to buy.
They are priced at \$12.99, \$13.99, and \$14.99.
What is the cost of the 3 CDs, not including tax?

Show your work.

Answer: _____

Do example A by yourself. Do example B with help.

16a. Compute the following using mental math.

$$25 * 10 = \underline{\hspace{2cm}}$$

$$17 * 1000 = \underline{\hspace{2cm}}$$

$$23 * 100,000 = \underline{\hspace{2cm}}$$

16b. Solve:

$$8 * 16 = \underline{\hspace{2cm}}$$

$$9 * 21 = \underline{\hspace{2cm}}$$

$$4 * 33 = \underline{\hspace{2cm}}$$

Do example A by yourself. Do example B with help.

17a. Estimate, to the nearest dollar, the pre-tax cost of purchasing all the following items at a fast food restaurant.

Hamburger	\$ 0.89
French fries	\$ 1.25
Soda	\$ 0.99
Chocolate Shake	\$ 1.89

Show your work here:

17b. If the restaurant, to celebrate its anniversary, offered to not charge any tax, would the \$4.00 you have in your pocket buy you this meal? If so, how much would have left over? If not, how much would you still need?

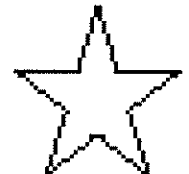
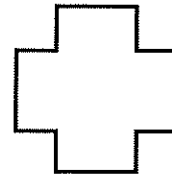
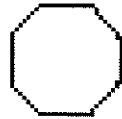
Show your work here:

18a. Your schedule today was very busy. At 10:00 am your best friend came over and together you rode to the beach. By bike, the beach is 20 minutes away. You spent 4 hours and 45 minutes at the beach and then biked home because you got a terrible sunburn. At what time did you arrive back home?

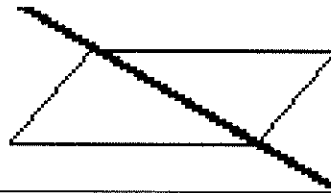
Answer: _____

Do example A by yourself. Do example B with help.

19a. Show the lines of symmetry for each shape shown below.



19b. Explain why the line drawn on the figure below is NOT a line of symmetry.



20a. After estimating, solve the problems. Show your work.

	Estimate	Exact Answer
$17 * 21 =$	_____	_____
$49 * 99 =$	_____	_____
$306 * 68 =$	_____	_____

Do example A by yourself. Do example B with help.

21a. Name the digit in the given place value for the following decimal.

26,324,198.56

hundred thousands: _____

millions: _____

ones: _____

ten thousands: _____

22a. Write the six-digit number that has . . .

a seven in the tens place

2 in the ten thousands place

eight in the ones place

one fourth of 12 in the hundreds place

the smallest factor of 10 in the thousands place

5 in all remaining places

_____ , _____

23a. Find the value(s) of the variables in the algebraic equations below.

$$x + 6 = 13$$

$$99 - z = 44$$

$$x = \underline{\hspace{2cm}}$$

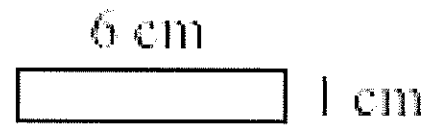
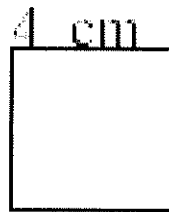
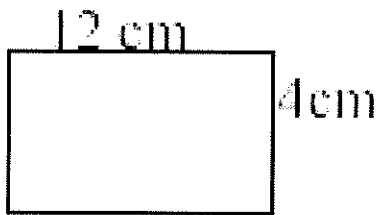
$$z = \underline{\hspace{2cm}}$$

24a. If you were to flip a fair coin in the air, what is the chance that you will get a heads?

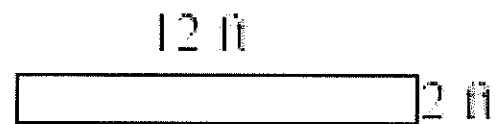
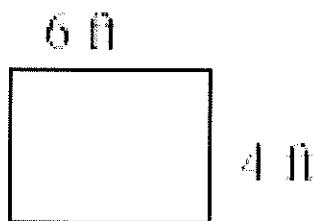
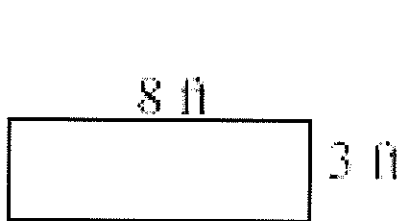
24b. What is the probability of you getting two heads in a row? _____

Do example A by yourself. Do example B with help.

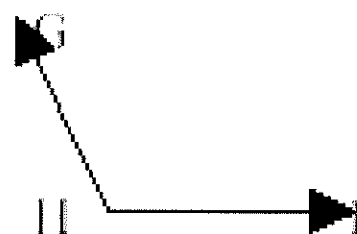
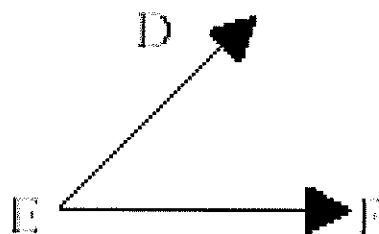
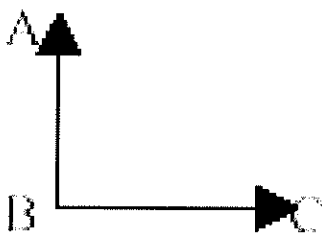
25a. Give the perimeter of the shapes below, using appropriate labels.



25b. Give the perimeter and area for the following shapes, using appropriate labels. What do you notice?



26a. Estimate the measures of the following angles and label each as acute, obtuse, or right.



Do example A by yourself. Do example B with help.

27a. Trevor, Mike, and Keisha all collect baseball cards. Altogether, the kids have 46 cards. Mike has 16 cards. Keisha and Trevor have the same number of cards. How many baseball cards do Keisha and Mike each have? (Please show your work.)

27b. Trevor trades $\frac{1}{3}$ of his cards to Mike and in return gets 3 valuable cards from Mike. After this trade, who has the most baseball cards? (Please show your work.)

Do example A by yourself. Do example B with help.

28a. Solve.

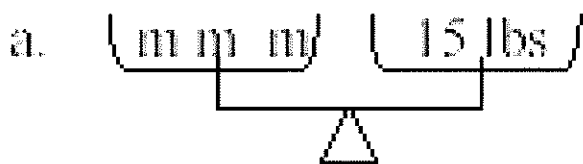
50% of 100 is _____

25% of 100 is _____

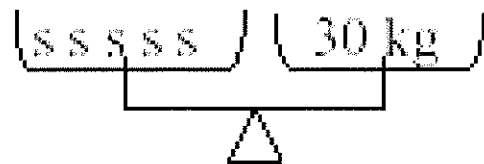
45% of 100 is _____

17% of 100 is _____

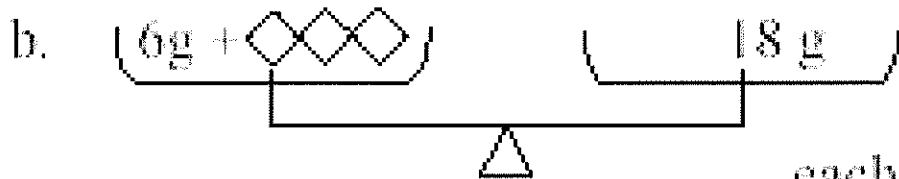
29a. Solve the following pan balance problems. In each picture, the pans are in perfect balance.



each m = _____ lbs



each s = _____ kg



each  = _____ g

Do example A by yourself. Do example B with help.

30a. A jar holds 24 colored glass marbles (6 are blue, 4 are yellow, 3 are green, 1 is white, and the rest are red). If you reached into the jar without looking and pulled out one marble, that marble is most likely to be which color? How do you know?

30b. Using the marble jar described in part a, what is the probability of choosing, again without looking, a marble that is

green	= yes	no	blue	= yes	no
red	= yes	no	yellow	= yes	no
white	= yes	no	orange	= yes	no

31a. Solve the following clock fractions.

$\frac{1}{4}$ of an hour = _____ minutes

$\frac{1}{3}$ of an hour = _____ minutes

45 minutes = _____ of an hour

10 minutes = _____ of an hour

5 minutes = _____ of an hour

6 minutes = _____ of an hour

$\frac{1}{20}$ of an hour = _____ minutes

$\frac{1}{30}$ of an hour = _____ minutes

Do example A by yourself. Do example B with help.

For each word problem, write an open sentence (one that uses a variable) to go along with the information provided. Then use the open sentence to solve the problem. Some problems may require more than one math sentence.

32a. You have agreed to mow your neighbor's lawn as a summer job. Each week you will earn \$45 for mowing the lawn twice – on Wednesdays and Sundays. If you stay with job for 11 weeks, how much will you earn this summer?

Open ended sentence: _____

Solve:

32b. Now let's pretend that for 10 days you will be away at summer camp. Not only will you miss three days of mowing, but you are also going to pay half the cost of the camp for your family. If the camp costs \$700, how much will earn by the end of the summer?

Open ended sentence: _____

Solve:

Do example A by yourself. Do example B with help.

33a. Solve the following long division problems. Be sure to estimate first and remember to check your work with multiplication. Express any remainders by using R.

$$6 \overline{) 828}$$

$$9 \overline{) 6.543}$$

$$3 \overline{) 24,512}$$

34a. Solve the following problems according to the order of operations described below.

1. parentheses
2. exponents
3. multiplication or division, left to right
4. addition or subtraction, left to right

Remember: Please excuse my dear Aunt Sally!

$$(12 - 6) * 8 = \underline{\hspace{2cm}}$$

$$18 + (9 * 3) = \underline{\hspace{2cm}}$$

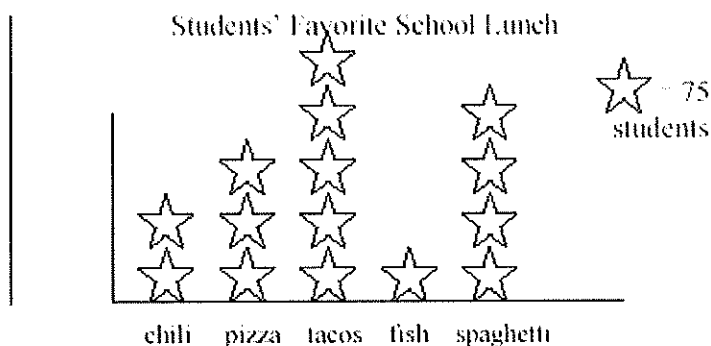
$$12 + 6 * 0 = \underline{\hspace{2cm}}$$

$$42 + 6 * 0 - 1 = \underline{\hspace{2cm}}$$

$$9 * 32 + 11 * 2 = \underline{\hspace{2cm}}$$

Do example A by yourself. Do example B with help.

35a. Use the pictograph below to answer the following questions.



Label the vertical axis and horizontal axis of the graph with appropriate titles.

35b. If every student's vote is shown on this graph, how many students attend this school?

Answer: _____

36a. Complete the following metric length relationships.

_____ mm = 1 cm

_____ cm = 1 dm

_____ m = 1 km

_____ mm = 1 dm

_____ cm = 1 m

_____ dm = 1 km

_____ mm = 1 m

_____ dm = 1 m

_____ cm = 1 km

Do example A by yourself. Do example B with help.

37a. Round 2,617,483 to the nearest . . .

million = _____

ten thousand = _____

hundred = _____

37b. Round 8,629,741,083.593 to the nearest . . .

billion = _____

tenth = _____

hundredth = _____

38a. Complete the following conversion tables. The first one has been done for you.

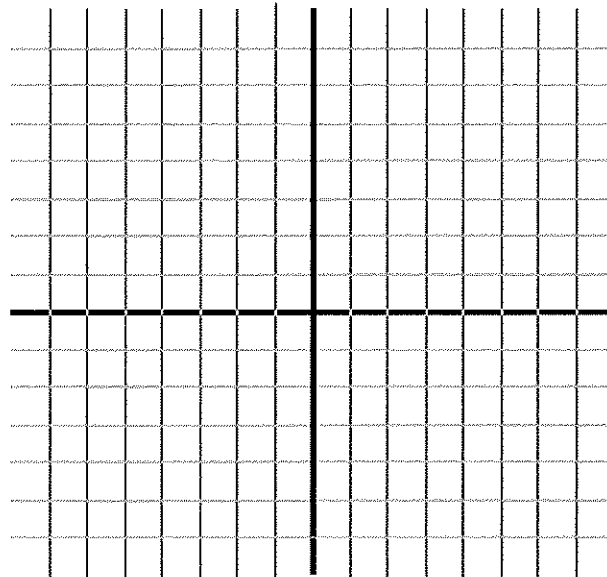
Fraction	Decimal	Percent
$\frac{1}{2}$.5	50%
	.4	
		75%
	.8	
		20%
$\frac{1}{3}$		

Do example A by yourself. Do example B with help.

Plot the given points on the coordinate grid using the color ink indicated. Then connect the points with a straightedge. Finally, name the shape constructed.

39a. pencil (1,2), (3,2), (5,6), (7,6)

39b. blue ink (-1,0), (2,-3), (-3,0), (-6,-3)



hint:
label the
origin (0,0)

Complete the following equivalencies.

40a. customary units of length

_____ inches = 1 foot

_____ feet = 1 yard

_____ yards = 1 mile

_____ inches = 1 yard

_____ feet = 1 mile

40b. customary units of weight

_____ ounces = 1 pound

_____ pounds = 1 ton

_____ ounces = 1 ton

40c. customary units of capacity

_____ cups = 1 pint

_____ cups = 1 quart

_____ cups = 1 gallon

_____ pints = 1 quart

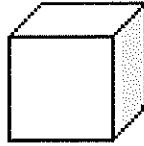
_____ pints = 1 gallon

_____ quarts = 1 gallon

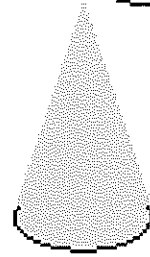
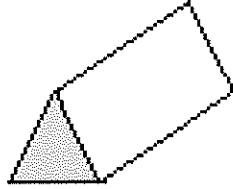
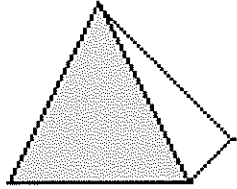
Do example A by yourself. Do example B with help.

41a-b. Name the 3-dimensional solid and give its number of:
faces, edges, and vertices.

a.



b.

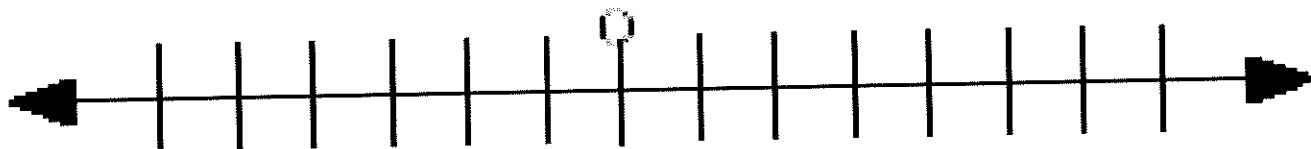


42a. Add or subtract the mixed numbers/fractions

$\frac{1}{3} + \frac{1}{3} = \underline{\hspace{2cm}}$	$\frac{1}{5} + \frac{3}{5} = \underline{\hspace{2cm}}$	$\frac{8}{10} - \frac{3}{10} = \underline{\hspace{2cm}}$
$\frac{6}{4} + \frac{10}{4} = \underline{\hspace{2cm}}$	$3 \frac{1}{2} + 2 \frac{1}{2} = \underline{\hspace{2cm}}$	$9 \frac{3}{4} - 5 \frac{1}{4} = \underline{\hspace{2cm}}$

Do example A by yourself. Do example B with help.

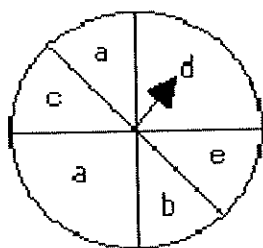
43a. Place the following integers on the number line: 1, -5, 4, -2, 6, -3, 7



44a. Add.

$2 + (-3) = \underline{\hspace{2cm}}$	$-4 + (-5) = \underline{\hspace{2cm}}$	$5 + (-1) = \underline{\hspace{2cm}}$
$9 + (-7) = \underline{\hspace{2cm}}$	$-6 + 12 = \underline{\hspace{2cm}}$	$-8 + (-5) = \underline{\hspace{2cm}}$

Use this lettered spinner to answer the questions below.



45a. What is the probability of spinning a(n) . . .

a? b? c? d? e?

Do example A by yourself. Do example B with help.

Solve the money number stories.

46a. In the bookstore you find a new series of mystery books that you have been wanting to read all summer. You would like to buy as many as you can afford, in order. The first five are specially priced at \$5.75 each (including tax), but the rest are \$7.45 (including tax).

46b. You have \$65.00 saved from your summer job and are willing to spend it all on these books. How many can you buy?

Show your work.

Answer: _____

THE END

YOU HAVE OFFICIALLY REVIEWED 5TH GRADE MATH.

Congratulations!