4ᵗʰ Grade Math
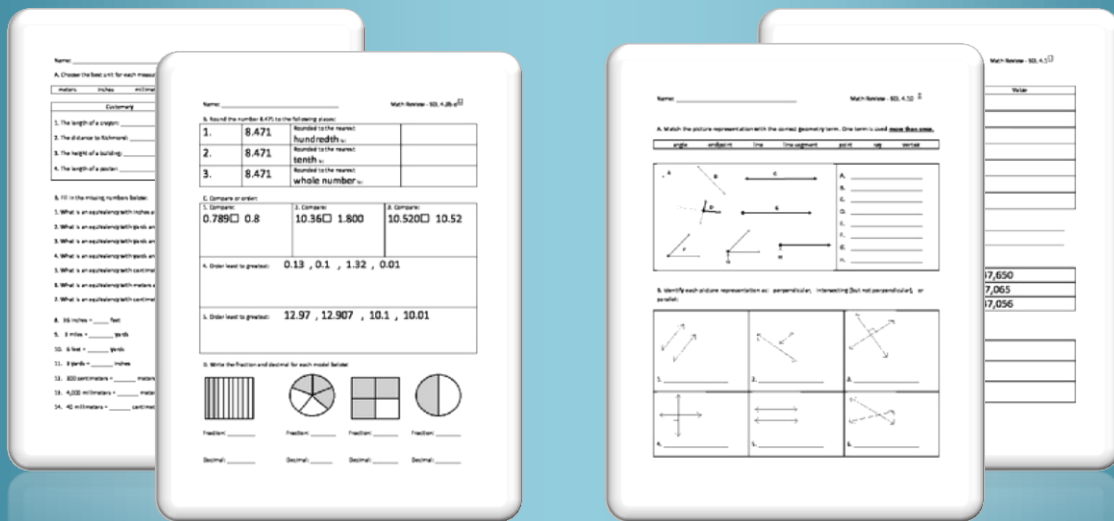
Virginia SOL Review:

24 work pages

plus 24 answer key pages!

By Lesley Hogan

A. Identify the place and value for each digit in the number 9,347,065

Digit	Place	Value
0		
3		
4		
5		
6		
7		
9		

Now write 9,347,065 in expanded form: _____

_____

B. Compare the following numbers:

1.	9,347,065 □ 9,347,650
2.	9,347,065 □ 9,347,065
3.	9,347,065 □ 9,347,056

C. Round the number 9,347,065 to the following places:

1.	9,347,065	Rounded to the nearest thousand is:	
2.	9,347,065	Rounded to the nearest ten thousand is:	
3.	9,347,065	Rounded to the nearest hundred thousand is:	

A. Compare or order:

1. Compare: $\dfrac{2}{3}$ ☐ $\dfrac{5}{12}$

2. Compare: $1\dfrac{1}{2}$ ☐ $1\dfrac{4}{8}$

3. Order from least to greatest: $\dfrac{2}{3}$, $\dfrac{5}{12}$, $\dfrac{1}{3}$, $\dfrac{4}{8}$

4. Order from greatest to least: $2\dfrac{1}{6}$, $2\dfrac{3}{4}$, $1\dfrac{3}{6}$, $2\dfrac{1}{8}$

B. Represent an equivalent fraction to $\dfrac{3}{4}$ as 1) a fraction and 2) a picture.

C. Circle all of the equivalent expressions: (add division box at home)

1. 7 divided by 8:

$\dfrac{7}{8}$ 8 divided by 7   7 times 8 $\dfrac{8}{7}$ 8 times 7

2. $\dfrac{3}{10}$

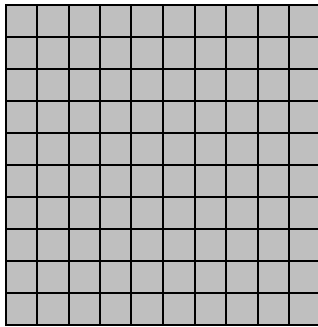3 times 10   10 divided by 3   3 divided by 10   10 times 3 $\dfrac{10}{3}$
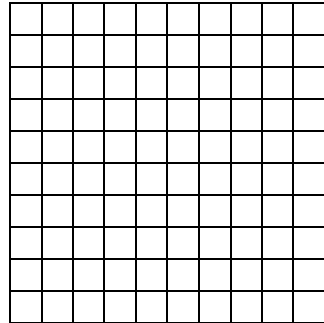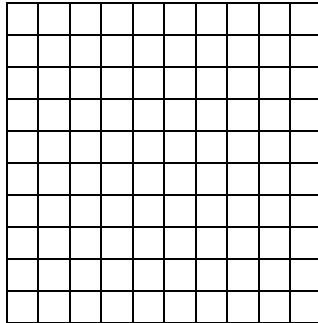
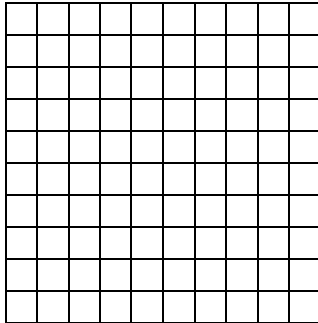Name: _____ Math Review - SOL 4.3a

A. Decimals

1. How is the decimal 6.725 written in words? _____

_____

2. Write the decimal "thirty-two and five hundredths" in standard form: _____

3. This is one whole:

Shade the model below to represent the decimal number 2.41

4. This is one whole:

Write the number modeled below, in standard form:

_____

B. Round the number 8.471 to the following places:

1.	8.471	Rounded to the nearest hundredth is:	
2.	8.471	Rounded to the nearest tenth is:	
3.	8.471	Rounded to the nearest whole number is:	

C. Compare or order:

1. Compare: 0.789□ 0.8	2. Compare: 10.36□ 1.800	3. Compare: 10.520□ 10.52
4. Order least to greatest: 0.13 , 0.1 , 1.32 , 0.01		
5. Order least to greatest: 12.97 , 12.907 , 10.1 , 10.01		

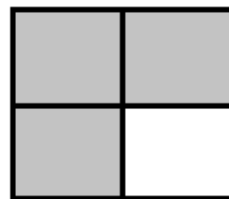D. Write the fraction and decimal for each model below:
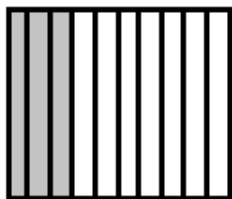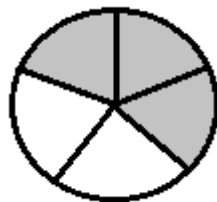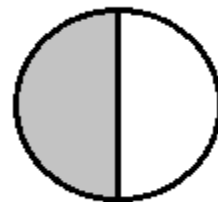
Fraction: _____   Fraction: _____   Fraction: _____   Fraction: _____

Decimal: _____   Decimal: _____   Decimal: _____   Decimal: _____

Name: _____   Math Review - SOL 4.4a-c

A. Estimate:

1. 333,812 + 728,914   2. 46,009 – 22,187

3. 413 x 85   4. 392 ÷ 8

B. Find the exact answer.

1. 333,812 + 728,914   2. 46,009 – 22,187   3. 413 x 85

4. 62 x 8   5. 384 x 7   6. 25 x 91

C. Divide:

1. 392 ÷ 8   2. 612 ÷ 5   3. 56 ÷ 7

D. Solve the word problems.

1. There were 60 people at a picnic. 23 went home. Then, 12 more people came to the picnic. How many people are at the picnic now?

2. There are 16 students in class. Each student eats 2 pieces of pizza, except for 3 students who only eat 1 piece of pizza each. How many pieces of pizza did the students eat in all?

3. There are 92 pumpkins on a truck. They each weigh 5 pounds. 18 pumpkins fall off of the truck. How much do the pumpkins left on the truck weigh?

D. Solve the word problems.

4. Maria and her 3 best friends go to the adventure park. If each ticket costs $20, how much do their tickets cost in all?

5. Hannah's class is collecting cans. They collected 527 cans between Monday and Friday. On Monday, they collected 92 cans. On Tuesday, they collected 84 cans. On Wednesday, they collected 49 cans. On Thursday, they collected 104 cans. How many cans did they collect on Friday?

6. Jake has $792 to spend on gifts for his family. He spends $294 on a gift for his parents and $139 on a gift for his grandparents. How much does he have left to spend?

Name: _____

A. Factors and Multiples

1. Find the greatest common factor (GCF) of 18 and 33: _____

2. Find all of the common factors of 12 and 36: _____

3. Circle all of the common factors of 72 and 54:

1   2   3   4   6   8   9   12   16   18   24   27   48   54   72

4. Find the greatest common factor (GCF) of 24, 36, and 18: _____

5. Find the least common multiple (LCM) of 8 and 12: _____

6. Find three common multiples of 5 and 10: _____ , _____ , _____

7. Circle all of the common multiples of 4, 5, and 10:

1   4   5   10   20   30   40   45   50   60   100

8. Find the least common multiple (LCM) of 3, 7, and 10: _____

B. Add or subtract the fractions:

1. $\dfrac{3}{5} + \dfrac{1}{5} =$

2. $\dfrac{2}{3} + \dfrac{3}{10} =$

3. $\dfrac{5}{8} + \dfrac{1}{2} =$

4. $\dfrac{5}{12} + \dfrac{1}{3} =$

5. $\dfrac{7}{12} + \dfrac{2}{3} =$

6. $\dfrac{3}{5} - \dfrac{2}{5} =$

7. $\dfrac{7}{10} - \dfrac{1}{5} =$

8. $\dfrac{1}{5} - \dfrac{1}{6} =$

9. $\dfrac{5}{6} - \dfrac{3}{8} =$

C. Add or subtract the decimals:

1. 1.73 + 3.12

2. 4.561 + 0.991

3. 8.7 + 4.04

4. 0.6 + 0.91

5. 1.737 - 0.522

6. 9.43 - 6.72

7. 0.6 - 0.03

8. 1.7 - 0.524

9. 7.0 - 6.72

D. Solve the word problems:

1. If a shirt costs $12.37, a pair of shorts costs $8.99, and a pair of sunglasses costs $4.50, then how much do they cost in all?

2. Hilary paid $13.59 for a pizza and a drink, including tax. If the tax was $1.38 and the drink cost $2.99, how much did the pizza cost?

D. Solve the word problems:

1. Katie went trick or treating. $\frac{1}{6}$ of her candy is M&M's. $\frac{1}{8}$ of her candy is Skittles. How much more (as a fraction) of her candy is M&M's than Skittles?

2. Maria, Kara, and Tommy order 1 pizza to share. Maria eats $\frac{1}{4}$ of the pizza, Kara eats $\frac{1}{8}$ of the pizza, and Tommy eats $\frac{3}{8}$ of the pizza. How much of the pizza is left?

3. Nate is running from school to home. He runs $\frac{1}{2}$ of the total distance to his house. He stops for a water break and then runs $\frac{1}{3}$ more of the total distance from his school to his house. How far has he run (as a fraction)?

4. Avery, Chad, and Dexter are sharing a chocolate bar. Avery eats $\frac{1}{5}$ of the chocolate bar, and Chad eats $\frac{5}{12}$ of the chocolate bar. How much is left for Dexter to eat?

Name: _____   Math Review - SOL 4.6 🖩

A. Choose the best unit for each measurement below, using the units in the word box:

Ounces	kilograms	tons	pounds	grams

1. The weight of a dog: _____

2. The mass of a computer: _____

3. The weight of a pencil: _____

4. The mass of a flower: _____

5. The weight of a car: _____

B. Fill in the missing numbers below:

1. What is an equivalency with pounds and ounces? _____ = _____

2. What is an equivalency with pounds and tons? _____ = _____

3. What is an equivalency with kilograms and grams? _____ = _____

4. 3 pounds = _____ ounces

5. 2 tons = _____ pounds

6. 6,000 pounds = _____ tons

7. 3 kilograms = _____ grams

8. 32 ounces = _____ pounds

9. 10,000 grams = _____ kilograms

Name: _____   Math Review - SOL 4.7 🔲

A. Choose the best unit for each measurement below, using the units in the word box:

| meters | inches | millimeters | centimeters | feet | yards | miles |

Customary	Metric
1. The length of a crayon: _____	5. The height of a door: _____
2. The distance to Richmond: _____	6. The length of a stapler: _____
3. The height of a building: _____	7. The width of a drop of water: _____
4. The length of a poster: _____	

B. Fill in the missing numbers below:

1. What is an equivalency with inches and feet? _____ = _____

2. What is an equivalency with yards and miles? _____ = _____

3. What is an equivalency with yards and feet? _____ = _____

4. What is an equivalency with yards and inches? _____ = _____

5. What is an equivalency with centimeters and millimeters? _____ = _____

6. What is an equivalency with meters and millimeters? _____ = _____

7. What is an equivalency with centimeters and meters? _____ = _____

8. 36 inches = _____ feet

9. 3 miles = _____ yards

10. 6 feet = _____ yards

11. 3 yards = _____ inches

12. 200 centimeters = _____ meters

13. 4,000 millimeters = _____ meters

14. 40 millimeters = _____ centimeters

15. 4 feet = _____ inches

16. 3,520 yards = _____ miles

17. 72 inches = _____ yards

18. 6 yards = _____ feet

19. 30 centimeters = _____ millimeters

20. 5 meters = _____ centimeters

21. 5 meters = _____ millimeters

A. Circle the measurement closest to the liquid volume of this container:
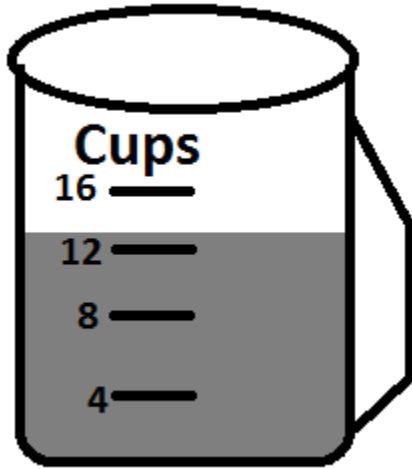
a. 10 cups

b. 13 cups

c. 15 cups

d. 21 cups

B. Fill in the missing numbers below:

1. What is an equivalency with cups and pints? _____ = _____

2. What is an equivalency with pints and quarts? _____ = _____

3. What is an equivalency with gallons and quarts? _____ = _____

4. 1 gallon = _____ cups   10. 14 cups = _____ pints

5. 1 gallon = _____ pints   11. 9 pints = _____ cups

6. 32 cups = _____ gallons   12. 8 quarts = _____ pints

7. 32 pints = _____ gallons   13. 8 pints = _____ quarts

8. 1 quart = _____ cups   14. 12 quarts = _____ gallons

9. 8 cups = _____ quarts   15. 5 gallons = _____ quarts

Name: _____   Math Review - SOL 4.9 🖩

A. Determine the elapsed time:

      1.   6:00 p.m. to 9:00 p.m.   _____ hours _____ minutes

      2.   10:53 a.m. to 11:59 a.m.   _____ hours _____ minutes

      3.   7:42 a.m. to 9:18 a.m.   _____ hours _____ minutes
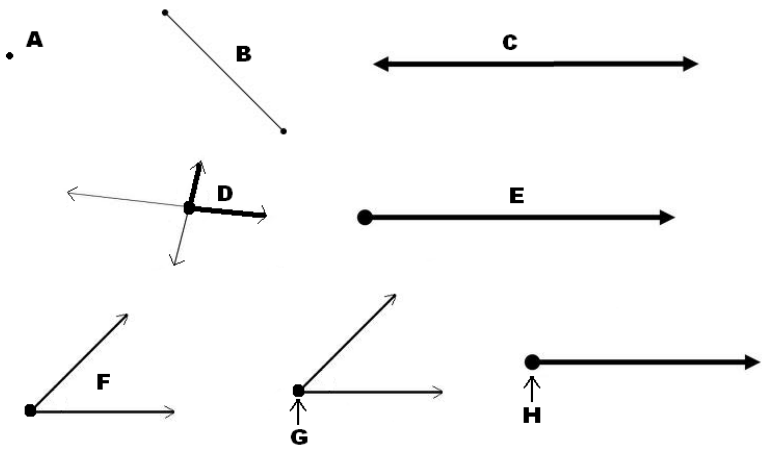
      4.   10:15 a.m. to 1:25 p.m.   _____ hours _____ minutes

      5.   4:50 p.m. to 1:27 a.m.   _____ hours _____ minutes
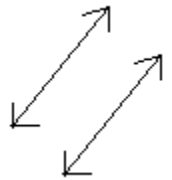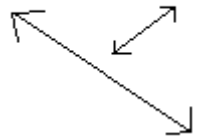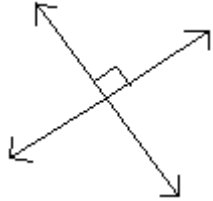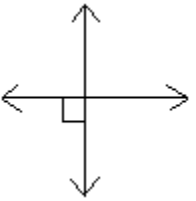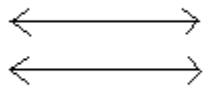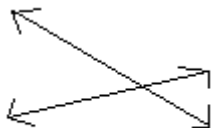
Name: _____   Math Review - SOL 4.10

A. Match the picture representation with the correct geometry term. One term is used **more than once.**

angle	endpoint	line	line segment	point	ray	vertex

A.
B.
C.
D.
E.
F.
G.
H.
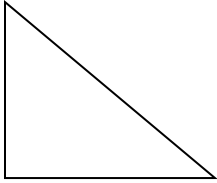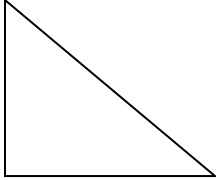
A. _____
B. _____
C. _____
D. _____
E. _____
F. _____
G. _____
H. _____

B. Identify each picture representation as: perpendicular, intersecting (but not perpendicular), or parallel:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____
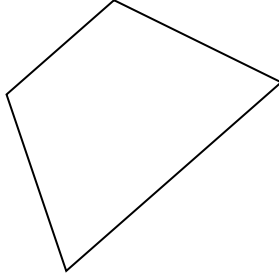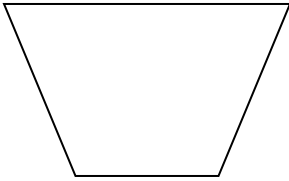
A. Write yes or no.

1. Will translated a triangle like this:

Triangle	Translation
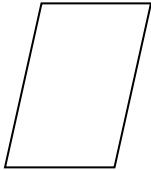
Are the two triangles congruent? _____

2. Evan rotated a trapezoid like this:

Trapezoid	Rotation

Are the two trapezoids congruent? _____
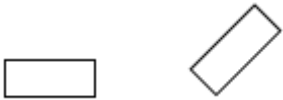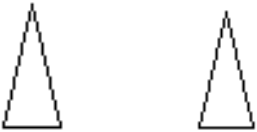
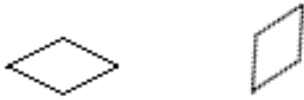3. Kara reflected a parallelogram like this:

Parallelogram	Reflection

Are the two parallelograms congruent? _____

4. Are translations, reflections, and rotations always congruent? _____

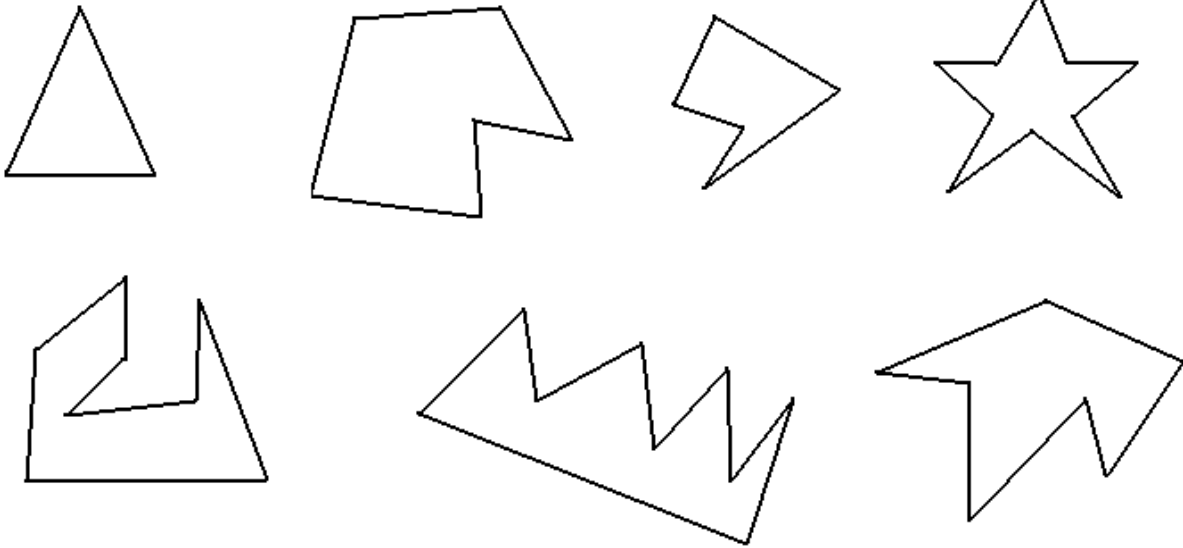B. Circle whether each set shows a translation, reflection, or rotation. There may be more than one correct answer.

1. Translation
 	
     Reflection
 	
     Rotation	

2. Translation
 	
     Reflection
 	
     Rotation	

3. Translation
 	
     Reflection
 	
     Rotation	

4. Translation
 	
     Reflection
 	
     Rotation	

5. Translation
 	
     Reflection
 	
     Rotation	

6. Translation
 	
     Reflection
 	
     Rotation	

A. Put a check next to each statement that is true for **polygons**:

❑ Has at least three sides   ❑ Open figure
❑ Can have curved sides   ❑ Closed figure
❑ Must have straight sides   ❑ Sides may not cross
❑ Sides are made of line segments   ❑ Geometric solid (3D)
❑ Sides may cross   ❑ Plane figure (2D)
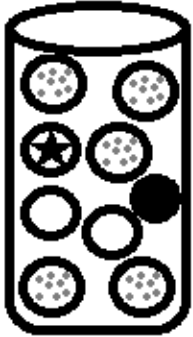
B1. Write the name of each polygon:

B2. Write the name of each quadrilateral. Or, if it doesn't have a special name, just write quadrilateral:
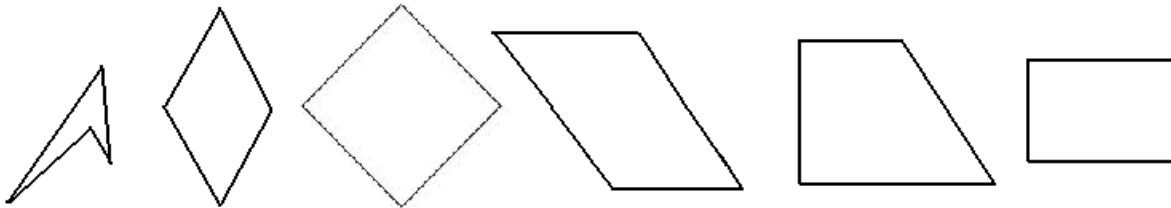
A. Match the likelihood with each outcome using the word bank below. Then, write the fraction that represents the probability. One term will be used **more than once**.

certain	unlikely	equally likely	likely	impossible

1. Picking a spotted marble: _____   Fraction: _____

2. Picking a cube out of the bag: _____   Fraction: _____

3. Picking a white marble: _____   Fraction: _____

4. Picking a marble out of the bag: _____   Fraction: _____

5. Picking a black marble versus picking a star marble: _____

Both have a fraction of: _____

6. If one spotted marble is taken out of the bag, the probability of picking a spotted marble:

_____   Fraction: _____

7. What marble kind is least likely to be picked? _____

8. What marble kind is most likely to be picked? _____

9. What are the possible outcomes of this event (picking a marble from the bag)?

_____

_____

B. Write each of the outcomes from part (A) #3, #4, #5, and #6 in the correct place on the number line below. #1 and #2 have been done for you.

#2   #1

0   1
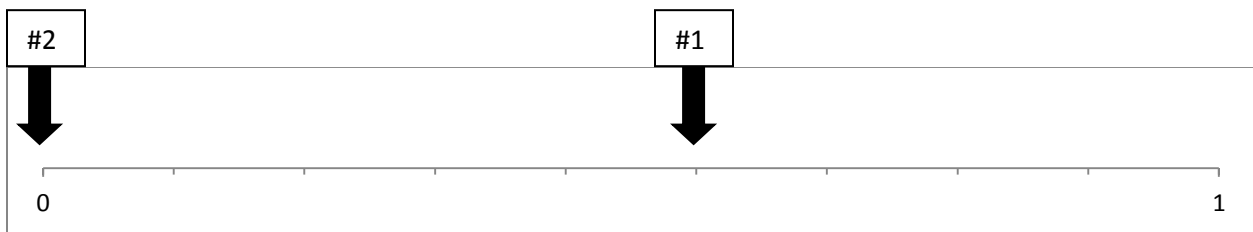
A. Five students sold lemonade, and the customers voted on whose lemonade tasted the best. Construct a bar graph showing how many votes each student got, counting by 100's.

Alex: 157	Jane: 280	Sally: 316	Mike: 234	Tom: 109

1. Whose lemonade got the most votes? _____

2. About how many more people voted for the most popular lemonade than the least popular lemonade? _____

3. About how many people voted for Jane and Sally? _____

4. Which two people received the closest number of votes? _____ and _____

B. Layla put some snow in a cup and measured how much was still frozen every hour. Construct a line graph showing her data. (Remember that time always goes on the bottom axis!)

Time	Snow still frozen
1 hour	32 grams
2 hours	16 grams
3 hours	8 grams
4 hours	4 grams
5 hours	2 grams
6 hours	1 gram

1. Between which two hours did the snow melt the most quickly? _____ and _____

2. How many grams of snow melted between hour 3 and hour 4? _____

3. Between which two hours did 8 grams of snow melt? _____ and _____

Name: _____ Math Review - SOL 4.15

A. What is the **rule** and the **next/missing number** in each pattern?

1. 50, 100, 150, 200…   Rule: _____   Next number: _____

2. 37, 49, 61, ___ , 85   Rule: _____   Missing number: _____

3. 19, 16, 13, 10, …   Rule: _____   Next number: _____

B. Follow the rule for each pattern to find the **next 3 numbers**:
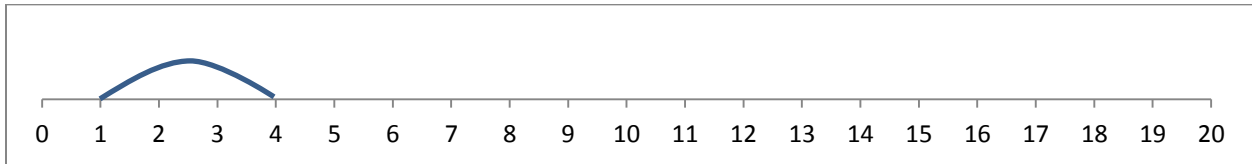
1. Rule: Add 75.   20, _____ , _____ , _____

2. Rule: Subtract 15   90, _____ , _____ , _____

3. Rule: Subtract 9   100, _____ , _____ , _____

4. Rule: Add 8.   13, _____ , _____ , _____

5. Rule: Multiply by 3   1, _____ , _____ , _____

C. Show the pattern "Add 3" on the number line. Start at 1.

0   1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   16   17   18   19   20

D. Fill in the missing numbers in the table:

In	Out
3	9
4	10
7	
	18

A. Continue the patterns.

1. ☺★☺☺★☺☺☺★☺☺☺☺★   What is the 30th shape: _____

2. ●●●   ●●●   ●●●   How many circles are in the 5th term: _____
              ●●●   ●●●
              ●●●

3. Draw the first 12 shapes of a pattern that follows the rules: two circles come before a square, and every fourth shape is a star:

___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

B. Fill in the missing number: Math Review - SOL 4.16 🖩

1. 4 + 5 = 10 – _____	3. 4 + 9 = _____ + 6
2. 3 + 8 = 30 – _____	4. 3 + 4 + 7 = 2 + _____

C. Use the **<u>associative property</u>** to finish the number sentences:

        1. (4 x 2) x 3 = _____

        2. (6 + 5) + 7 = _____

D. Circle all of the examples below that demonstrate the associate property of addition. Underline all of the examples that show the associative property of multiplication.

(8 x 0) x 9 =8 x (0 x 9)   (7 x 1) x 2 =7 x (1 x 2)   (15 + 3) + 8 =15 + (3 + 8)

(5 + 3) + 1 =18 – 9   (0 + 0) + 0 =0 + (0 + 0)   (9 x 0) x 9 =0 x (0 x 0)

(3 + 0) + 7 = 3 + (0 + 7)   (4 x 5) x 1 =4 x (5 x 1)   (18 + 2) + 6 =18 + (2 + 6)

(3 x 6) x 2 =3 x (6 x 2)   7+2=2+7   (4 + 2) + 6 =6 x (2 x 1)

A. Identify the place and value for each digit in the number 9,347,065

Digit	Place	Value
0	Hundreds	0
3	Hundred thousands	300,000
4	Ten thousands	40,000
5	Ones	5
6	Tens	60
7	Thousands	7,000
9	Millions	9,000,000

Now write 9,347,065 in expanded form: ____9,000,000 + 300,000 + 40,000 + 7,000 + 60 + 5_____

_____

B. Compare the following numbers:

1.	9,347,065 < 9,347,650
2.	9,347,065 = 9,347,065
3.	9,347,065 > 9,347,056

C. Round the number 9,347,065 to the following places:

1.	9,347,065	Rounded to the nearest thousand is:	9,347,000
2.	9,347,065	Rounded to the nearest ten thousand is:	9,350,000
3.	9,347,065	Rounded to the nearest hundred thousand is:	9,300,000

Name: _____

A. Compare or order:

1. Compare: $\dfrac{2}{3} > \dfrac{5}{12}$

2. Compare: $1\dfrac{1}{2} = 1\dfrac{4}{8}$

3. Order from least to greatest: $\dfrac{2}{3}$, $\dfrac{5}{12}$, $\dfrac{1}{3}$, $\dfrac{4}{8}$

: $\dfrac{1}{3}$, $\dfrac{5}{12}$, $\dfrac{4}{8}$, $\dfrac{2}{3}$

4. Order from greatest to least: $2\dfrac{1}{6}$, $2\dfrac{3}{4}$, $1\dfrac{3}{6}$, $2\dfrac{1}{8}$

$2\dfrac{3}{4}$, $2\dfrac{1}{6}$, $2\dfrac{1}{8}$, $1\dfrac{3}{6}$

B. Represent an equivalent fraction to $\dfrac{3}{4}$ as 1) a fraction and 2) a picture.

$\dfrac{6}{8}$
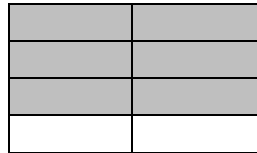
C. Circle all of the equivalent expressions: (add division box at home)

1. 7 divided by 8:

$\dfrac{7}{8}$ 8 divided by 7   7 times 8 $\dfrac{8}{7}$ 8 times 7

2. $\dfrac{3}{10}$

3 times 10   10 divided by 3   3 divided by 10   10 times 3 $\dfrac{10}{3}$

A. Decimals

1. How is the decimal 6.725 written in words? ____Six and seven hundred twenty-five thousandths_____

2. Write the decimal "thirty-two and five hundredths" in standard form: _____32.05_____

3. This is one whole:
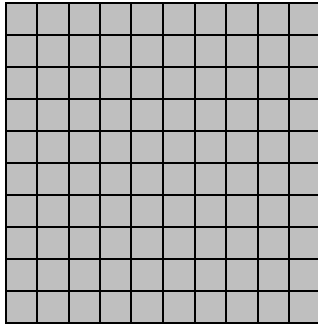
Shade the model below to represent the decimal number 2.41
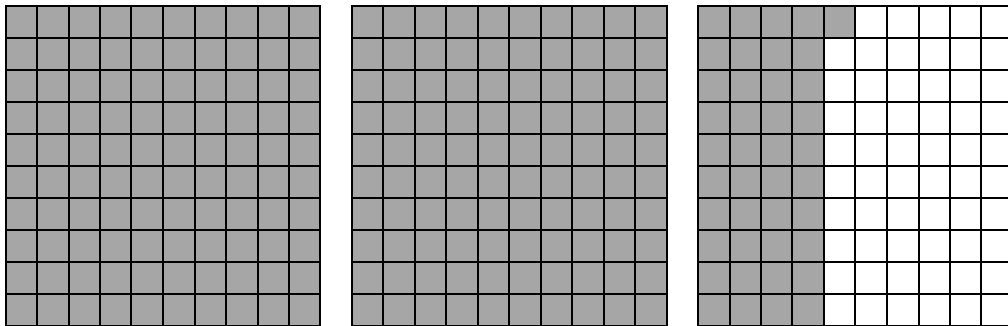
4. This is one whole:

Write the number modeled below, in standard form:
_____0.9_____
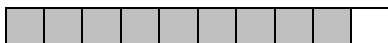
B. Round the number 8.471 to the following places:

1.	8.471	Rounded to the nearest hundredth is:	8.47
2.	8.471	Rounded to the nearest tenth is:	8.5
3.	8.471	Rounded to the nearest whole number is:	8

C. Compare or order:

1. Compare:	2. Compare:	3. Compare:
0.789 < 0.8	10.36 > 1.800	10.520 = 10.52

4. Order least to greatest: 0.13 , 0.1 , 1.32 , 0.01

0.01, 0.1, 0.13, 1.32

5. Order least to greatest: 12.97 , 12.907 , 10.1 , 10.01

10.01, 10.1, 12.907, 12.97

D. Write the fraction and decimal for each model below:
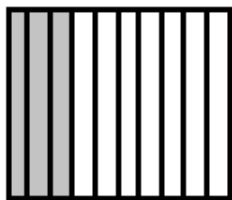
Fraction: $\dfrac{3}{10}$

Decimal: _____0.3_____
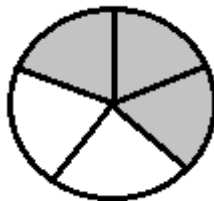
Fraction: $\dfrac{3}{5}$

Decimal: ____0.6____
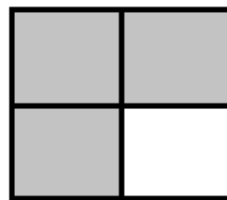
Fraction: $\dfrac{3}{4}$

Decimal: ___0.75_____
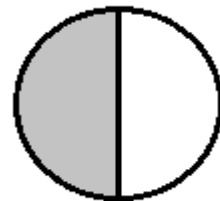
Fraction: $\dfrac{1}{2}$

Decimal: _____0.5____

Name: _____   Math Review - SOL 4.4a-c

A. Estimate:

1. 333,812 + 728,914   2. 46,009 − 22,187

300,000 + 700,000 = 1,000,000   50,000 − 20,000 = 30,000

3. 413 x 85   4. 392 ÷ 8

400 x 90 = 36,000   400 ÷ 8 = 50

B. Find the exact answer.

1. 333,812 + 728,914   2. 46,009 − 22,187   3. 413 x 85

   1,062,726   23,822   35,105

4. 62 x 8   5. 384 x 7   6. 25 x 91

   496   2,688   2,275

C. Divide:

1. 392 ÷ 8   2. 612 ÷ 5   3. 56 ÷ 7

   49   122 R2   8

D. Solve the word problems.

1. There were 60 people at a picnic. 23 went home. Then, 12 more people came to the picnic. How many people are at the picnic now?

49 people are at the picnic now.

2. There are 16 students in class. Each student eats 2 pieces of pizza, except for 3 students who only eat 1 piece of pizza each. How many pieces of pizza did the students eat in all?

They ate 29 pieces of pizza.

3. There are 92 pumpkins on a truck. They each weigh 5 pounds. 18 pumpkins fall off of the truck. How much do the pumpkins left on the truck weigh?

They weigh 370 lbs.

D. Solve the word problems.

4. Maria and her 3 best friends go to the adventure park. If each ticket costs $20, how much do their tickets cost in all?

The tickets cost $80.

5. Hannah's class is collecting cans. They collected 527 cans between Monday and Friday. On Monday, they collected 92 cans. On Tuesday, they collected 84 cans. On Wednesday, they collected 49 cans. On Thursday, they collected 104 cans. How many cans did they collect on Friday?

They collected 198 cans on Friday.

6. Jake has $792 to spend on gifts for his family. He spends $294 on a gift for his parents and $139 on a gift for his grandparents. How much does he have left to spend?

He has $359 left.

Name: _____   Math Review - SOL 4.5a

A. Factors and Multiples

1. Find the greatest common factor (GCF) of 18 and 33: ___3___

2. Find all of the common factors of 12 and 36: ___1,2,3,4,6,12_____

3. Circle all of the common factors of 72 and 54:

|1| |2| |3| 4 |6| 8 |9| 12 16 |18| 24 27 48 54 72

4. Find the greatest common factor (GCF) of 24, 36, and 18: __6____

5. Find the least common multiple (LCM) of 8 and 12: __24___

6. Find three common multiples of 5 and 10: ___10___ , ___20____ , ___30_____

7. Circle all of the common multiples of 4, 5, and 10:

1   4   5   10 |20| 30 |40| 45   50 |60| |100|

8. Find the least common multiple (LCM) of 3, 7, and 10: ___210_____

Name: _____ Math Review - SOL 4.5b

B. Add or subtract the fractions:

1. $\dfrac{3}{5} + \dfrac{1}{5} =$

$\dfrac{4}{5}$

2. $\dfrac{2}{3} + \dfrac{3}{10} =$

$\dfrac{29}{30}$

3. $\dfrac{5}{8} + \dfrac{1}{2} =$

$\dfrac{9}{8} = 1\dfrac{1}{8}$

4. $\dfrac{5}{12} + \dfrac{1}{3} =$

$\dfrac{9}{12} = \dfrac{3}{4}$

5. $\dfrac{7}{12} + \dfrac{2}{3} =$

$\dfrac{15}{12} = 1\dfrac{3}{12} = 1\dfrac{1}{4}$

6. $\dfrac{3}{5} - \dfrac{2}{5} =$

$\dfrac{1}{5}$

7. $\dfrac{7}{10} - \dfrac{1}{5} =$

$\dfrac{5}{10} = \dfrac{1}{2}$

8. $\dfrac{1}{5} - \dfrac{1}{6} =$

$\dfrac{1}{30}$

9. $\dfrac{5}{6} - \dfrac{3}{8} =$

$\dfrac{11}{24}$

C. Add or subtract the decimals:

1. 1.73 + 3.12

    4.85

2. 4.561 + 0.991

    5.552

3. 8.7 + 4.04

    12.74

4. 0.6 + 0.91

    1.51

5. 1.737 - 0.522

    1.215

6. 9.43 - 6.72

    2.71

7. 0.6 - 0.03

    0.57

8. 1.7 - 0.524

    1.176

9. 7 - 6.72

    0.28

D. Solve the word problems:

1. If a shirt costs $12.37, a pair of shorts costs $8.99, and a pair of sunglasses costs $4.50, then how much do they cost in all?

They cost $25.86.

2. Hilary paid $13.59 for a pizza and a drink, including tax. If the tax was $1.38 and the drink cost $2.99, how much did the pizza cost?

The pizza cost $9.22.

D. Solve the word problems:

1. Katie went trick or treating. $\frac{1}{6}$ of her candy is M&M's. $\frac{1}{8}$ of her candy is Skittles. How much more (as a fraction) of her candy is M&M's than Skittles?

One twenty-fourth more is M&Ms.

2. Maria, Kara, and Tommy order 1 pizza to share. Maria eats $\frac{1}{4}$ of the pizza, Kara eats $\frac{1}{8}$ of the pizza, and Tommy eats $\frac{3}{8}$ of the pizza. How much of the pizza is left?
One fourth is left.

3. Nate is running from school to home. He runs $\frac{1}{2}$ of the total distance to his house. He stops for a water break and then runs $\frac{1}{3}$ more of the total distance from his school to his house. How far has he run (as a fraction)?

He has run five sixths of the way.

4. Avery, Chad, and Dexter are sharing a chocolate bar. Avery eats $\frac{1}{5}$ of the chocolate bar, and Chad eats $\frac{5}{12}$ of the chocolate bar. How much is left for Dexter to eat?

Twenty three sixtieths is left.

A. Choose the best unit for each measurement below, using the units in the word box:

Ounces	kilograms	tons	pounds	grams

1. The weight of a dog: _____pounds_____   4. The mass of a flower: _____grams_____

2. The mass of a computer: _____kilograms__   5. The weight of a car: _____tons_____

3. The weight of a pencil: _____ounces_____

B. Fill in the missing numbers below:

1. What is an equivalency with pounds and ounces? _____1 pound_____ = _____16 ounces_____

2. What is an equivalency with pounds and tons? _____1 ton_____ = _____2,000 pounds__

3. What is an equivalency with kilograms and grams? _____1 kilogram_____ = _____1,000 grams__

4. 3 pounds = ___48____ ounces   7. 3 kilograms = ___3,000_____ grams

5. 2 tons = ____4,000_____ pounds   8. 32 ounces = ___2____ pounds

6. 6,000 pounds = ____3____ tons   9. 10,000 grams = ___10___ kilograms

A. Choose the best unit for each measurement below, using the units in the word box:

meters	inches	millimeters	centimeters	feet	yards	miles

Customary	Metric
1. The length of a crayon: _____inches_____	5. The height of a door: _____meters_____
2. The distance to Richmond: _____miles_____	6. The length of a stapler: _____centimeters_____
3. The height of a building: _____yards_____	7. The width of a drop of water: _____millimeters__
4. The length of a poster: _____feet_____	

B. Fill in the missing numbers below:

1. What is an equivalency with inches and feet? ____1 foot_____ = _____12 inches_____

2. What is an equivalency with yards and miles? _____1 mile_____ = _____1,760 yards_____

3. What is an equivalency with yards and feet? _____1 yard_____ = _____3 feet_____

4. What is an equivalency with yards and inches? _____1 yard_____ = _____36 inches_

5. What is an equivalency with centimeters and millimeters? _____1 centimeter_ = ___10 millimeters__

6. What is an equivalency with meters and millimeters? _____1 meter_____ = ___1,000 millimeters___

7. What is an equivalency with centimeters and meters? _____1 meter_____ = _____100 centimeters__

8. 36 inches = ___3___ feet

9. 3 miles = ___5,280_____ yards

10. 6 feet = ____2_____ yards

11. 3 yards = ___108_____ inches

12. 200 centimeters = ___2_____ meters

13. 4,000 millimeters = ___4_____ meters

14. 40 millimeters = ____4_____ centimeters

15. 4 feet = ____48_____ inches

16. 3,520 yards = ___2_____ miles

17. 72 inches = ____2___ yards

18. 6 yards = ___18____ feet

19. 30 centimeters = ___300____ millimeters

20. 5 meters = ___500___ centimeters

21. 5 meters = ___5,000___ millimeters

A. Circle the measurement closest to the liquid volume of this container:
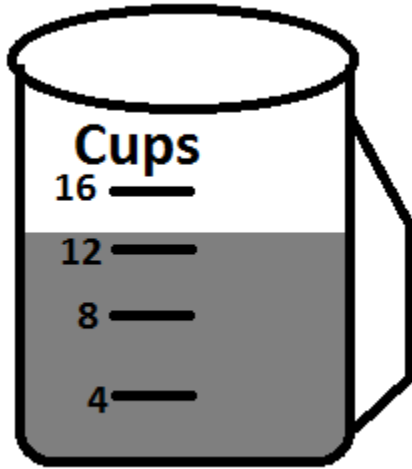
e. 10 cups

f. **13 cups**

g. 15 cups

h. 21 cups

B. Fill in the missing numbers below:

1. What is an equivalency with cups and pints? _____1 pint_____ = _____2 cups_____

2. What is an equivalency with pints and quarts? _____1 quart_____ = _____2 pints_____

3. What is an equivalency with gallons and quarts? _____1 gallon_____ = _____4 quarts_____

4. 1 gallon = ___16____ cups

5. 1 gallon = ___8___ pints

6. 32 cups = _2_____ gallons

7. 32 pints = ___4___ gallons

8. 1 quart = ___4___ cups

9. 8 cups = ___2_____ quarts

10. 14 cups = ___7___ pints

11. 9 pints = ___18___ cups

12. 8 quarts = ___16___ pints

13. 8 pints = ___4___ quarts

14. 12 quarts = ___3___ gallons
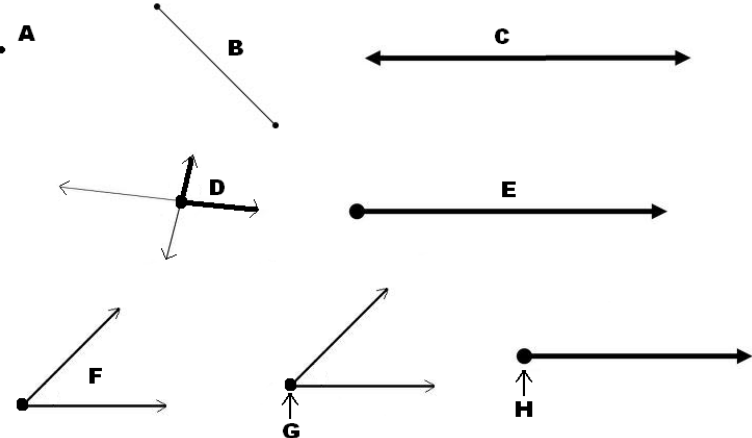
15. 5 gallons = ___20__ quarts

A. Determine the elapsed time:
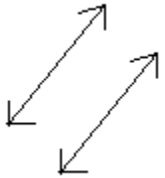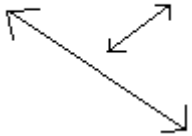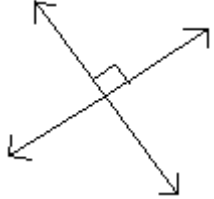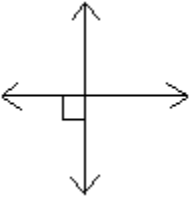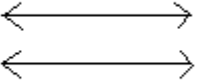
1. 6:00 p.m. to 9:00 p.m.   __3___ hours ___0___ minutes

2. 10:53 a.m. to 11:59 a.m.   __1___ hours ___6__ minutes

3. 7:42 a.m. to 9:18 a.m.   __1___ hours __36____ minutes

4. 10:15 a.m. to 1:25 p.m.   _3____ hours ___10___ minutes

5. 4:50 p.m. to 1:27 a.m.   _8____ hours __37___ minutes

A. Match the picture representation with the correct geometry term. One term is used **more than once.**

angle	endpoint	line	line segment	point	ray	vertex
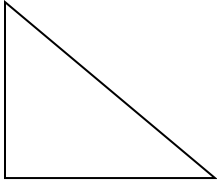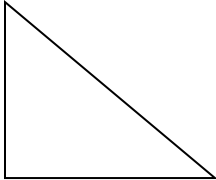
A. _____point_____

B. _____line segment_____

C. _____line_____

D. _____angle_____

E. _____ray_____

F. _____angle_____

G. _____vertex_____

H. _____endpoint_____

B. Identify each picture representation as: perpendicular,   intersecting (but not perpendicular),   or parallel:

1. _____parallel_____	2. _____intersecting_____	3. _____perpendicular_____
4. _____perpendicular_____	5. _____parallel_____	6. _____intersecting_____
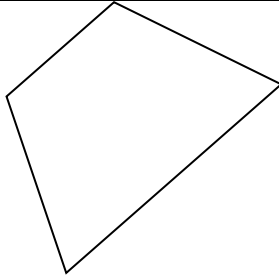
A. Write yes or no.

1. Will translated a triangle like this:

Triangle	Translation
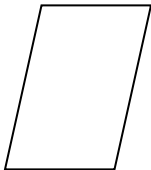
Are the two triangles congruent? _____yes_____

2. Evan rotated a trapezoid like this:

Trapezoid	Rotation

Are the two trapezoids congruent? _____yes_____
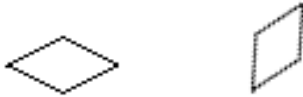
3. Kara reflected a parallelogram like this:

Parallelogram	Reflection

Are the two parallelograms congruent? _____yes_____

4. Are translations, reflections, and rotations always congruent? _____yes_____

B. Circle whether each set shows a translation, reflection, or rotation. There may be more than one correct answer.   I'm not including rotations of 360 degrees

1. Translation
 	
    Reflection
 	
    Rotation	

2. Translation
 	
    Reflection
 	
    Rotation	

3. Translation
 	
    Reflection
 	
    Rotation	

4. Translation
 	
    Reflection
 	
    Rotation	

5. Translation
 	
    Reflection
 	
    Rotation	

6. Translation
 	
    Reflection
 	
    Rotation	

A. Put a check next to each statement that is true for **polygons**:

☑ Has at least three sides   ☐ Open figure
☐ Can have curved sides   ☑ Closed figure
☑ Must have straight sides   ☑ Sides may not cross
☑ Sides are made of line segments   ☐ Geometric solid (3D)
☐ Sides may cross   ☑ Plane figure (2D)

B1. Write the name of each polygon:

Triangle   hexagon   pentagon   decagon
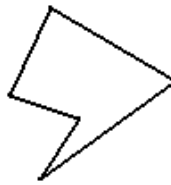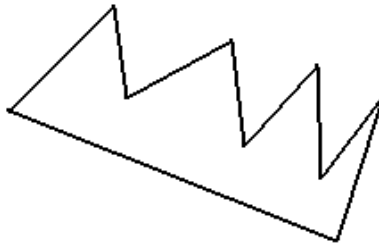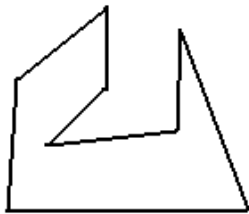
Octagon   nonagon   heptagon

B2. Write the name of each quadrilateral. Or, if it doesn't have a special name, just write quadrilateral:
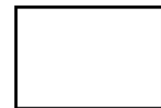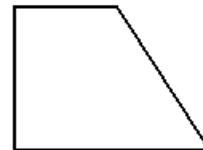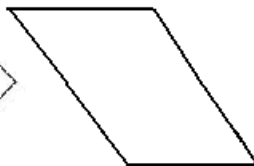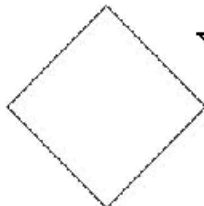
Quadrilateral   rhombus   square   parallelogram   trapezoid   rectangle

A. Match the likelihood with each outcome using the word bank below. Then, write the fraction that represents the probability. One term will be used **more than once**.

certain	unlikely	equally likely	likely	impossible
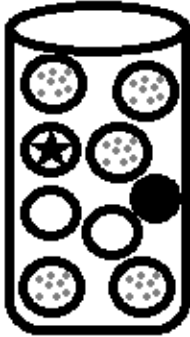
1. Picking a spotted marble: _____likely_____   Fraction: __five ninths___

2. Picking a cube out of the bag: _____impossible_____   Fraction: _zero ninths__

3. Picking a white marble: _____unlikely_____   Fraction: ___two ninths_

4. Picking a marble out of the bag: __certain_____   Fraction: ____nine ninths

5. Picking a black marble versus picking a star marble: __equally likely_____

Both have a fraction of: __one ninth_____

6. If one spotted marble is taken out of the bag, the probability of picking a spotted marble:

likely (VDOE also calls it equally likely)   Fraction: ___one half_____

7. What marble kind is least likely to be picked? _____black, star_____

8. What marble kind is most likely to be picked? _____spotted_____

9. What are the possible outcomes of this event (picking a marble from the bag)?

___pick a spotted marble, pick a star marble, pick a black marble, pick a white marble_____

_____

B. Write each of the outcomes from part (A) #3, #4, #5, and #6 in the correct place on the number line below. #1 and #2 have been done for you.

#2	#5	#3		#1		#4

0   1
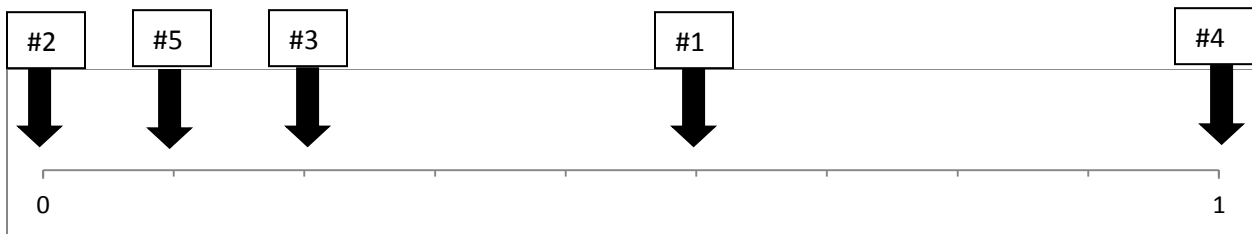
A. Five students sold lemonade, and the customers voted on whose lemonade tasted the best. Construct a bar graph showing how many votes each student got, counting by 100's.

Alex: 157	Jane: 280	Sally: 316	Mike: 234	Tom: 109
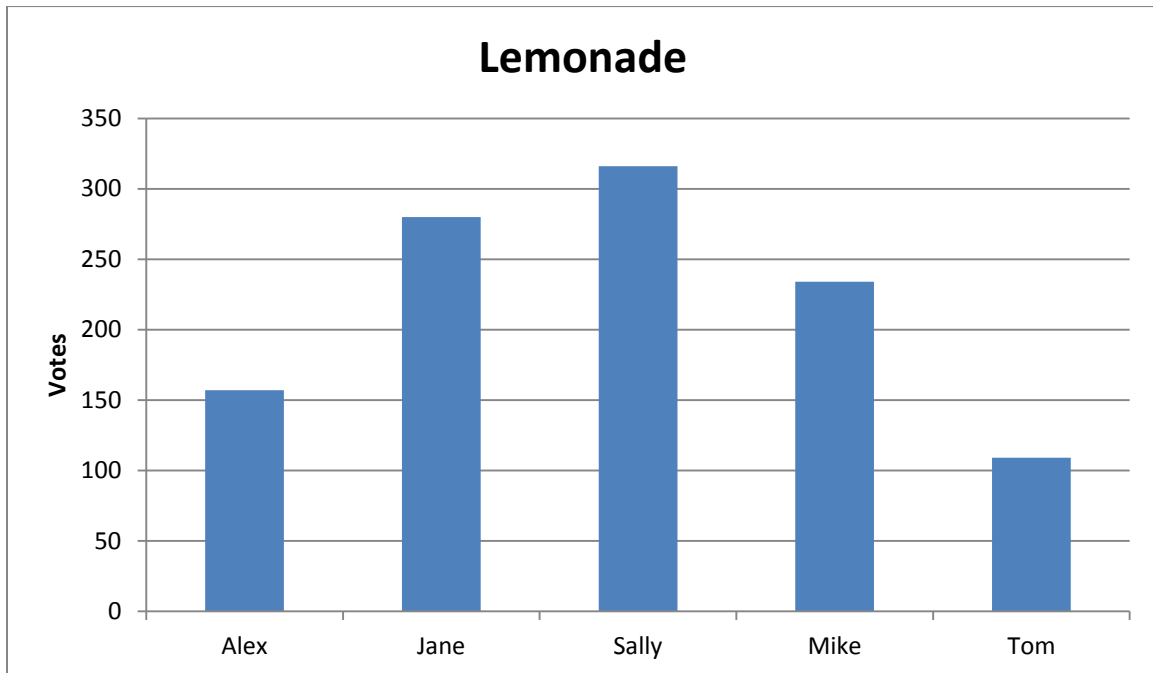
Lemonade

1. Whose lemonade got the most votes? _____Sally_____

2. About how many more people voted for the most popular lemonade than the least popular lemonade? _____200_____

3. About how many people voted for Jane and Sally? _____600_____

4. Which two people received the closest number of votes? ____Sally_____ and _____Jane_____

B. Layla put some snow in a cup and measured how much was still frozen every hour. Construct a line graph showing her data. (Remember that time always goes on the bottom axis!)

Time	Snow still frozen
1 hour	32 grams
2 hours	16 grams
3 hours	8 grams
4 hours	4 grams
5 hours	2 grams
6 hours	1 gram
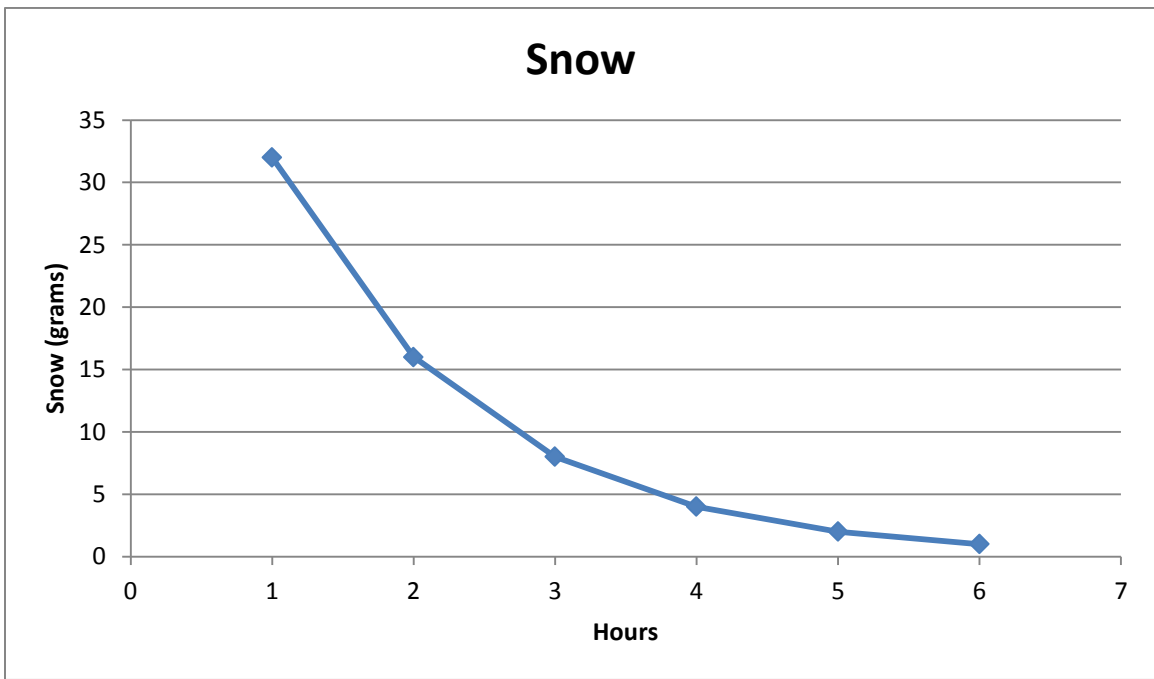
Snow

1. Between which two hours did the snow melt the most quickly? ____1_____ and _____2_____

2. How many grams of snow melted between hour 3 and hour 4? _____4_____

3. Between which two hours did 8 grams of snow melt? _____2_____ and _____3_____

A. What is the **rule** and the **next/missing number** in each pattern?

1. 50, 100, 150, 200…   Rule: _____Add 50_____   Next number: __250__

2. 37, 49, 61, ___, 85   Rule: _____Add 12_____   Missing number: __73_

3. 19, 16, 13, 10, …   Rule: _____Subtract 3_____   Next number: _7_____

B. Follow the rule for each pattern to find the **next 3 numbers**:

1. Rule: Add 75.   20, _95_____ , ___170_____ , ____245_____

2. Rule: Subtract 15   90, __75_____ , ___60_____ , ___45_____

3. Rule: Subtract 9   100, __91_____ , ___82_____ , __73_____

4. Rule: Add 8.   13, ___21_____ , ____29____ , ___37_____

5. Rule: Multiply by 3   1, ___3_____ , ____9____ , ___27_____

C. Show the pattern "Add 3" on the number line. Start at 1.
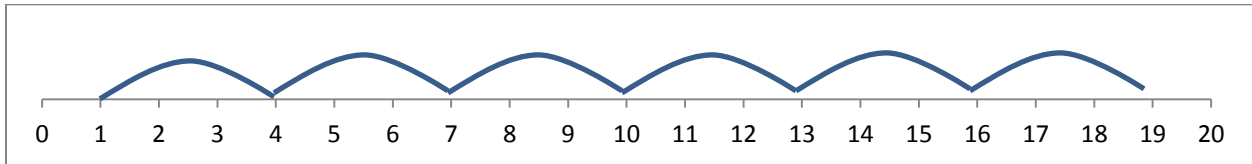
D. Fill in the missing numbers in the table:

In	Out
3	9
4	10
7	13
12	18

A. Continue the patterns.

1. ☺★☺☺★☺☺☺★☺☺☺☺★   What is the 30th shape: __☺__

2. ●●● ●●● ●●●   How many circles are in the 5th term: __15__
            ●●● ●●●
                 ●●●

3. Draw the first 12 shapes of a pattern that follows the rules: two circles come before a square, and every fourth shape is a star:

●●■★ ●●■★ ●●■★

B. Fill in the missing number: Math Review - SOL 4.16

1. 4 + 5 = 10 − _1_	3. 4 + 9 = _7_ + 6
2. 3 + 8 = 30 − _19_	4. 3 + 4 + 7 = 2 + _12_

C. Use the **associative property** to finish the number sentences:

1. (4 x 2) x 3 = _____4 x (2 x 3)_____

2. (6 + 5) + 7 = _____6 + (5 + 7)_____

D. Circle all of the examples below that demonstrate the associate property of addition. Underline all of the examples that show the associative property of multiplication.

<u>(8 x 0) x 9 =8 x (0 x 9)</u>   <u>(7 x 1) x 2 =7 x (1 x 2)</u> |(15 + 3) + 8 =15 + (3 + 8)|

(5 + 3) + 1 =18 − 9 |(0 + 0) + 0 =0 + (0 + 0)| (9 x 0) x 9 =0 x (0 x 0)

|(3 + 0) + 7 = 3 + (0 + 7)| <u>(4 x 5) x 1 =4 x (5 x 1)</u> |(18 + 2) + 6 =18 + (2 + 6)|

<u>(3 x 6) x 2 =3 x (6 x 2)</u>   7+2=2+7   (4 + 2) + 6 =6 x (2 x 1)