WELCOME TO 7th GRADE MATHEMATICS!

This summer work includes a variety of skills that are building blocks for next year's study of mathematics. To prepare you for a great beginning, some review work is required. Please bring your completed packet when we return in August (the second week of school will be fine!) Please complete the problems directly on the packet (you may print it out if you didn't get one prior to the end of school or pick a copy up from the main office.)

The problems are organized by the 6th grade units of study. Also included are Math IXL lessons that can assist with a review or some extra practice on any given topic. You DO NOT HAVE to do the IXL work; it is there to help you if you get stuck on a concept. Near each type of problem is a set of parentheses that includes the helpful IXL Level and Lesson (for example: H E.5 means go to Level H and find Lesson E.5) and after the parentheses is the IXL CODE you can enter into the search bar on your IXL homepage to get to that same helpful lesson.

If you have any questions, contact Mrs. Estep via email @testep@sylvaniaschools.org and THANK YOU in advance for your dedication to learning. I can't wait to meet you!!!

Mrs. Estep

Name _____

Math 2: Summer Work 6th to 7th

Prime Time (1)

Name: _____

List all of the factors of each number. (H E.5) CODE: VTM

1. 12
2. 45

Tell whether each number is prime or composite. (H E.3) CODE: DFC

3. 95
4. 17

Tell whether the second number is a multiple of the first. (F 0.3) CODE: EFB

5. 2;71
6. 1;18
7. 3;81

Write the prime factorization. Use exponents where possible. (H E.7) CODE: WLU

8. 126

Show your work to solve this problem. (H E.12) CODE: ZBB

9. At a store, hot dogs come in packages of eight and hot dog buns come in packages of twelve. What is the least number of packages of each type that you can buy and have no hot dogs or buns left over?

Find the least common multiples and the greatest common factor for each pair of numbers: (H E.10 NGA / H E.8 AMB)

10a. 8 and 12

LCM:

GCF:

b. 7 and 15

LCM:

GCF:

Write each mixed number as an improper fraction. (H I.8) CODE: P9A

1. $1\frac{7}{8}$
2. $2\frac{3}{4}$

Write each decimal as a fraction. (H I.10) CODE: HTJ

3. 1.25
4. 0.29

Write each improper fraction as a mixed number in simplest form. (H I.8) CODE: P9A

5. $\frac{8}{3}$
6. $\frac{5}{2}$

Write each fraction as a decimal. (H I.9) CODE: 62Y

7. $\frac{3}{50}$
8. $\frac{9}{100}$
9. $\frac{7}{25}$

Order from least to greatest. (G K.11) CODE: T76

10. $\frac{1}{4}, \frac{1}{3}, \frac{1}{6}$
11. $\frac{1}{2}, \frac{5}{6}, \frac{7}{8}$

Compare each pair of fractions. Use <, >, or =. Fill in the □ . (H I.6) CODE: SX9

12. $\frac{7}{8} \square \frac{3}{10}$
13. $\frac{4}{5} \square \frac{1}{2}$

Write this decimal number in words. (G G.3) CODE: F9G

14. 12.873

Use the information to solve the following problems. (H S.13) (H K.3) PE7 88T

15. In a class of 24 sixth-graders, 25% walk to school, 1/8 ride bicycles to school, 1/3 take the bus to school, and the remainder of the class are driven to school by their parents or guardians.

a. How many students in the class walk to school? Explain your reasoning.

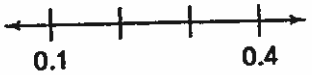
b. How many students in the class ride bicycles to school? Explain your reasoning.

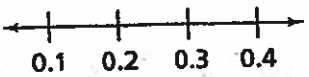
c. How many students in the class take the bus to school?

d. What fraction of the class are driven to school by their parent or guardian? Explain your reasoning.

Label the unlabeled marks with decimal numbers. Then tell the step (interval). (H F.8) CODE: AXN

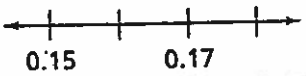
Sample:





The step is 0.1.

16.



17. Fill in the missing parts of the table. (H S.4) CODE: ZAV

Fraction	Decimal	Percent
$\frac{3}{8}$		
	0.88	
		35%
$1\frac{1}{4}$		
	0.625	
		275%

Note: DO NOT use a calculator on this unit's work!! *Let's Be Rational (4)*

(H J.4) CODE: WT5

1. Jack and Helen are making cookies. The recipe says to combine one-half cup of butter with three-fourths cup chocolate chips and three-eighths cup chopped nuts.

   a. When these three ingredients are mixed together, how many cups of the mixture will Jake and Helen have? Show your work.

2. Find each quotient. Show your strategy!! (Use Khan Academy if you forget!) OR (H L.5) DS2

a. $12 \div \frac{1}{2}$

b. $3 \div \frac{2}{3}$

c. $\frac{7}{8} \div 4$

d. $1\frac{2}{3} \div 6$

Estimate each sum. Use the benchmarks, 0, ½, and 1. (DO NOT actually solve!!) (G L.10) 9JR

3. $\frac{5}{16} + \frac{5}{8}$

4. $\frac{10}{12} + \frac{4}{5}$

Show your work to solve this problem. (H L.1) DXW

5. How many bows can you make from 5 meters of ribbon if making a bow takes ¼ of a meter of ribbon?

Find each sum or difference. Show your strategy!! (H J.6) CODE: TPZ

6. $2\frac{2}{3} + 4\frac{3}{4}$

7. $10\frac{11}{16} - 3\frac{7}{8}$

8. $9 - 3\frac{2}{5}$

Show your work to solve this problem. (G M.1) CODE: X8E

9. A kitten eats a fourth of a cup of cat food. Another cat in the same household eats 6 times as much. How much food does the cat eat?

Find each product. Show your strategy!! (Cross simplify before multiplying??) $\begin{pmatrix} H & K.6 \\ H & K.13 \end{pmatrix}$ BNT Z9M

10. $\frac{2}{3}$ of $\frac{1}{4}$

11. $\frac{2}{5} \times \frac{1}{2}$

12. $5\frac{1}{2} \times \frac{2}{5}$

13. $1\frac{2}{3} \times 3\frac{3}{4}$

Find the perimeter and area of each rectangle. Show formula work!! (G DD.12) CODE: MHV

1.

Perimeter:

Area:

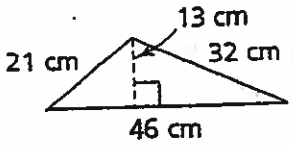
2. Length= 18m, Width= 12m

Perimeter:

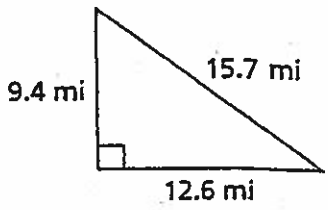
Area:

Find the area of each triangle. Show formula work! (H FF.6) CODE: C8S

3.

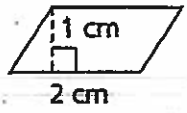


4.

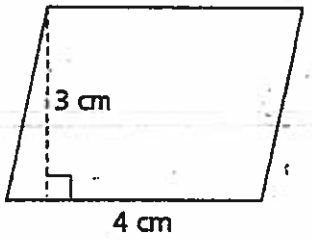


Find the area of each parallelogram below. Show formula work! (H FF.4) CODE: Y8K

5.



6.



Show your work to solve the following problem. Include the formula, substitution, and solution steps.

7. The length of a rectangle is 8 centimeters. The width is 6 centimeters. (G DD.12) MHV

a. What is the area?

b. What is the perimeter?

(H BB.3) CODE: BCM
(H R.11) CODE: 6Z2

Variables and Patterns (8)

1. A Student Council wants to throw a party for students. They decide to have a breakfast catered and they compare bids of two companies. *The Catering Crew* charges $8 per student. *Urbandale Catering Company* charges a set fee of $160 plus $6 per student. Make tables that show costs for each company in cases where 0, 20, 40, 60, 80, 100, and 120 students would attend. (See next page)

a. Make tables that show costs for each company in cases where 0, 20, 40, 60, 80, 100, and 120 students would attend. (See next page)

b. Plot the (number of students, catering costs) on a graph. Use different colors or plotting symbols for points to show the two catering companies. (See next page) then return here for 1 c-f work

c. Write equations relating total cost and number of students for each catering company.

Catering Crew:

Urbandale:

d. Why, if at all, does it make sense to connect the dots on your plots of part (c)?

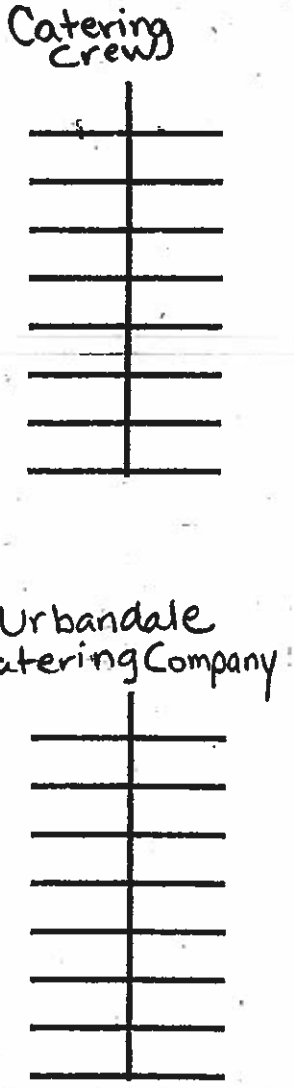
e. Is there any number of students for which both companies would charge the same rental fee?

f. If 60 students signed up to come to the breakfast, which company should the Student Council select? What if 100 students signed up for the breakfast? **Defend your reasoning.**

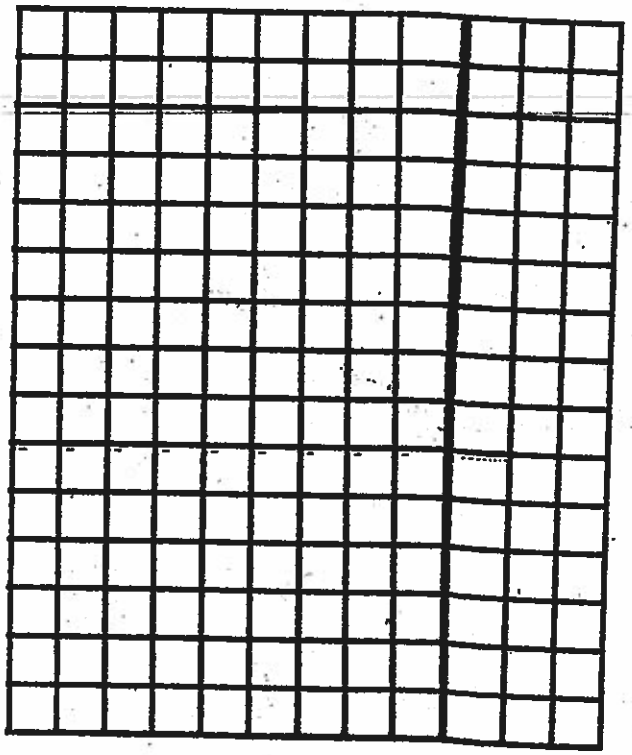
60:

100:

1. a.



b.



2. In parts (a-b) use symbols to express the rule as the equation. Use single letters to stand for the variables. Identify what each letter represents. (H 7.14) CODE: YVX

a. The perimeter of a rectangle is twice the length plus twice its width.

b. The area of a triangle is one-half its base multiplied by its height.

Note: DO NOT use a calculator for this unit!!

Decimal Ops (10)

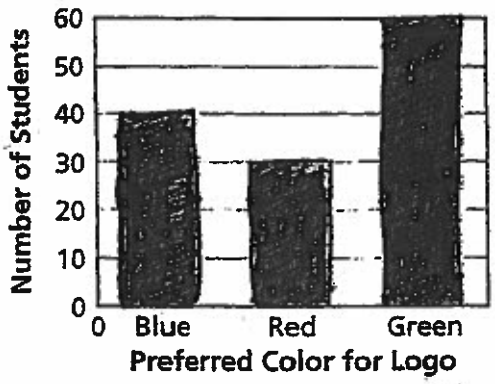
First estimate. Then find each sum or difference. Show your strategy!! (H G.3) CODE: SJ6

1. 2.1 + 3.4

2. 3.4 – 0.972

Show any work that helps you solve the following problems. (H S.14) CODE: 49B

3. The student council at Metropolis Middle School conducted a survey to see whether students would prefer blue, red, or green as the new color for the school logo. The results of the survey are shown in the bar graph below.



a. What is the total number of students who were surveyed?

b. What percent of students surveyed preferred blue?

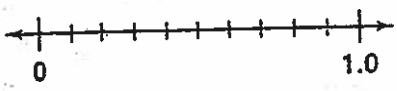
c. What percent of students surveyed preferred red?

d. What percent of students surveyed preferred green?

e. If 970 students attend Metropolis Middle School, what percent of the students were surveyed?

Order each set of decimals on a number line. (H F.8) CODE: AXN

4. 0.2, 0.6, 0.5



Find each product. Show your strategy!! (H H.2) CODE: 2WT

4.

$$\begin{array}{r} 5.342 \\ \times\ 13 \\ \hline \end{array}$$

5.

$$\begin{array}{r} 0.19 \\ \times\ 0.05 \\ \hline \end{array}$$

Find each quotient. Show your strategy!! (H H.7) CODE: BFR

6. $0.4\overline{)1.08}$

7. $0.02\overline{)0.06}$

8. $9\overline{)21.6}$

9. $108 \div 5$

For each of the following, decide if the quotient is less than or greater than 1. DO NOT actually solve!!

10a. $12.6 \div 11.8$

b. $5.6 \div 9.9$

11. Last year, the Widget Corporation had $650,000 in sales. This year, sales are down 4%. How much did the Widget Corporation sell this year? **Show your strategy!!** (H S.10) CODE: 8N4

12. A store is selling a sweater on sale for $17.90. The regular price is $22.95. What percent of the regular price is the sale price. **Show your strategy!!** (H S.14) CODE: 49B

Write a number sentence you could use for each situation. (H U.4) CODE: 3D8

13. A pen costs $0.59. How much would a dozen pens cost?

Use <, =, > to complete each statement. Fill in the □. (G I.17) CODE: 7NN

14. $2.8 \times 10 \square 26 \cdot 100$

15. $38.6 \cdot 10 \square 2 \cdot 38.6 \cdot 5$

Solve. (H S.10) CODE: 8N4

16. A bicycle goes on sale at 75% of its original price of $160. What is its sale price? Show your strategy!

Use the number sentence 123 × 4 = 492 to help you solve the following: (G I.14) CODE: 6FA

17a. 12.3×4

b. 1.23×4

c. 0.123×4

(H HH.2) CODE: ZZK

1. Glenda rolled two six-sided number cubes nine times and computed the sum of the numbers rolled each time.

   a. If the mean sum of Glenda's rolls was 6, what was the total of the nine sums Glenda rolled?

   b. Suppose Glenda's rolls were 12, 7, 3, 10, 9, 2, 11, 7, and 8. **Show your strategy!!**

      i. What is the median of Glenda rolls?

      ii. What is the mean of Glenda's rolls?

      iii. What is the mode of Glenda's rolls?

      iv. Which do you think is the best indicator of a typical roll Glenda made, the median, mean or mode? **Explain your reasoning.**

2. Mr. Watkins arranged the quiz scores of his afternoon math class from least to greatest: 5, 5, 6, 6, 6, 7, 7, 7, 7, 7, 8, 8, 8, 8, 8, 8, 9, 9, 9, 10, 10.

   a. How many students are in Mr. Watkins's afternoon math class?

   b. How do the quiz scores vary?

   c. What is the mode of the scores?

   d. What is the median of the scores?

For Exercises 3 and 4, use this information.

Mr. Johnson's class of 20 students collects 180 cans of food for the food drive.

Ms. Smith's class of 25 students collects 200 cans of food for the food drive.

3. Which class has a greater mean number cans of food?

a. Mr. Johnson's class

b. Ms. Smith's class

c. The means are equal.

d. There isn't enough information to tell.

4. Which class has a greater median number of cans of food?

f. Mr. Johnson's class

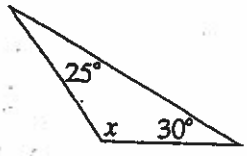
g. Ms. Smith's class

h. The means are equal.

i. There isn't enough information to tell.

Find the measure of each angle labeled x. (H CC.9) CODE: TFG

1.



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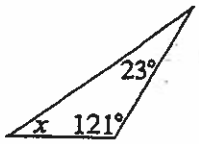
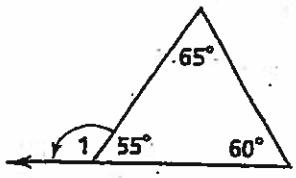


Find the measure of angle 1 in this figure.

3.



Use the diagram below to identify all the polygons for each name. List as many letters as there are that fit the name. (H CC.7) CODE: BCV

4. quadrilateral

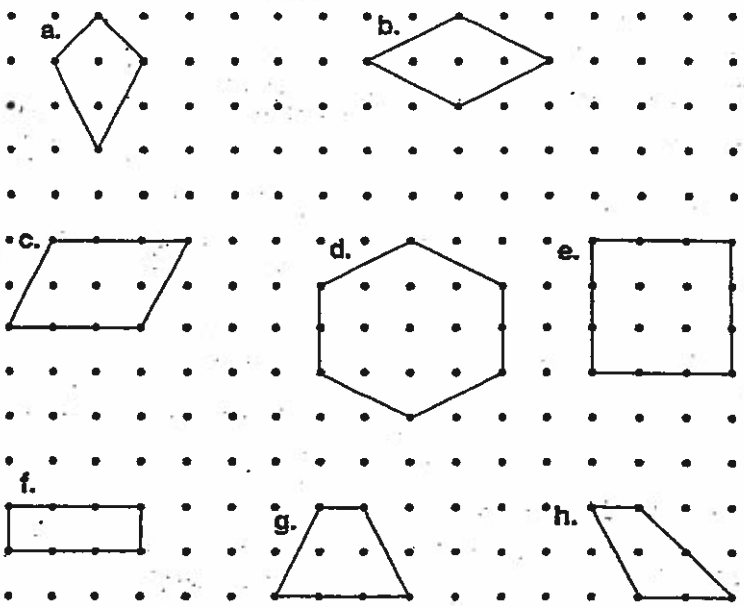
5. parallelogram

6. rhombus

7. rectangle

8. square

9. trapezoid

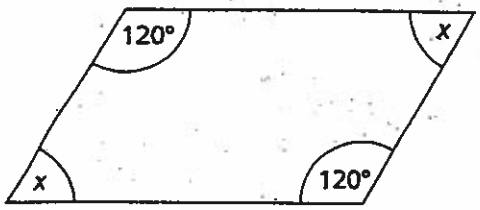


(H CC.10) CODE: A5B

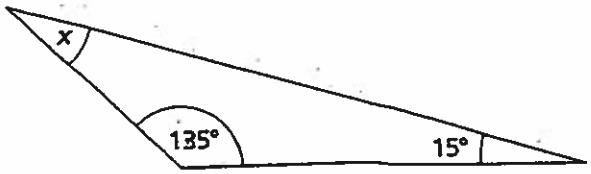
10. An isosceles triangle has two 50 degree angles. What is the measure of the third angle? Explain how you found your answer.

11. For each of the shapes below, find the unknown angle measure without using your angle ruler.

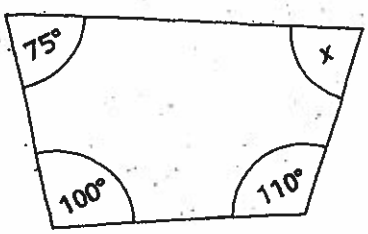
a. (H CC.11) CODE: L9E



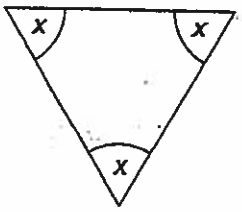
b.



c.

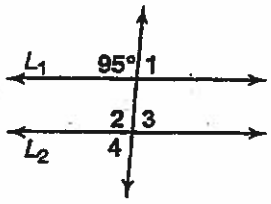


d.



In the each diagram below, lines L1 and L2 are parallel lines cut by a transversal. Find the measure of each numbered angle. (I W.20) CODE: CG9

12.



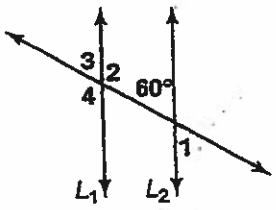
m<1_____

m<2_____

m<3_____

m<4_____

13.



m<1_____

m<2_____

m<3_____

m<4_____