Summer Math Packet for Students Entering Pre-Algebra

Dear Students and Families,

Welcome to Pre-Algebra! To help you prepare for the year ahead, we have prepared a summer math packet that reinforces the key foundational skills and previews some Pre-Algebra concepts.

Please follow these directions:

- Complete all ODD-NUMBERED problems in each section.
- If you struggle with a topic, we highly encourage you to complete the entire section, not just the odd problems.
- Please show all work. Credit will not be given for answers only!
- No calculators, except in Packet #5 (Geometry Unit).
- Simplify answers when possible.
- This packet will be graded and is due on the first day of school. It will count as a quiz grade.

Tips for Success:

- Set aside a small amount of time each week instead of cramming.
- Use scratch paper to organize your thinking and check your work.
- If you are stuck, revisit the examples or seek help from a family member or online resources.
- Remember, the goal is to strengthen your foundation - not just to get through it quickly!

Summer Pacing Guide (10 Weeks) (Optional Pace)

Week	Packet Focus
Week 1	Packet #1 – A, B, C, D
Week 2	Packet #1 – E, F, G
Week 3	Packet #2 – A, B, C
Week 4	Packet #2 – D, E, F
Week 5	Packet #3 – A, B, C
Week 6	Packet #3 – D, E
Week 7	Packet #4 – A-H
Week 8	Packet #5 – A, B, C, D (Calculator OK)
Week 9	Packet #5 – E, F, G (Calculator OK)
Week 10	Packet #6 – A-G

We are looking forward to an amazing year of learning and growing in math together. Have a great summer!

Warmly,

The MS Math Team

Name: _____ **Math 6 Review:** Packet #1

Topic A: Prime Factorization, GCF, and LCM

Determine whether the number is prime or composite.

1. 233	**2.** 864	**3.** 597	**4.** 1,109

Write the prime factorization of each number.

5. 75	**6.** 56
7. 810	**8.** 1,872

Find the greatest common factor (GCF) of each set of numbers.

9. 64 and 48	**10.** 72 and 156	**11.** 45 and 108

Find the least common multiple (LCM) of each set of numbers.

12. 18 and 30	**13.** 24 and 40	**14.** 12 and 28

Indicate whether you would use a GCF or LCM to solve the problem. Then solve.

15. Kiara has 80 lollipops and 32 Snicker bars. She is filling individual bags for Halloween and would like each bag to contain the same combination of lollipops and Snicker bars. How many bags can she fill if she wishes to have no candy leftover? How many lollipops and Snicker bars are in each bag?

16. Corey is stacking 10-inch boxes while Dale is stacking 12-inch boxes. They plan to stop when their stacks are the exact same height. At what height will this be?

Topic B: Operations with Fractions and Decimals

Evaluate. Write each answer as a fraction or mixed number in simplest form.

1. $\frac{1}{4}+4\frac{5}{6}$

2. $5\frac{1}{8}-2\frac{1}{6}$

3. $1\frac{3}{4}+5\frac{7}{10}$

4. $3\frac{1}{7}\cdot 2\frac{5}{6}$

5. $4\frac{1}{6}\div 1\frac{1}{4}$

6. $3\frac{2}{5}\div 4$

Evaluate.

7. 24.95 + 176.089

8. 98.1 – 14.726

9. 3.59(17)

10. 80.95(0.04)	**11.** 7.8(15.12)	**12.** $73.2 \div 8$
13. $\frac{61.95}{15}$	**14.** $\frac{91.8}{3.4}$	**15.** $2.12 \div 2.65$

Topic C: Applications with Fraction and Decimal Operations	
1. A trail that wraps around a lake is $1\frac{7}{8}$ miles long. Mara completed one lap around the lake. If she ran $\frac{4}{5}$ of the distance and walked the rest. How far did she run?	**2.** A piece of wire is $30\frac{2}{3}$ inches long. How many pieces of wire can be cut from this if each piece must be $1\frac{7}{9}$ inches long?
3. Nick bought $1\frac{5}{6}$ pounds of green apples and $1\frac{1}{4}$ pounds of red apples. How many total pounds of apples did he buy?	**4.** A taxi service charges \$1.20 per mile. If Serena paid \$16.38 for a ride to the airport, how many miles was the trip?

5. Jana's six children bought her a gift for her birthday and split the total cost evenly. If the gift cost $155.40, how much did each person pay?	**6.** If salami is on sale for $9.68 per pound, find the total cost for 1.5 pounds.

Topic D: Fractions vs. Decimals		
Write each decimal as a fraction or mixed number in simplest form.		
1. 2.8	**2.** 12.95	**3.** 7.125
Write each fraction or mixed number as a decimal.		
4. $3\frac{7}{25}$	**5.** $\frac{27}{40}$	**6.** $1\frac{5}{12}$

Topic E: Integers and Integer Operations			
1. Write an integer to model each situation. **a)** a $60 profit _____ **b)** a 7-yard loss _____ **c)** a 125-foot descent _____		**2.** Name the opposite of each integer. **a)** 19 _____ **b)** 43 _____ **c)** -7 _____ **d)** -26 _____	
Give each absolute value.			
3. $\|40\|$	**4.** $\|-17\|$	**5.** $\|21\|$	**6.** $\|-9\|$

7. Order from least to greatest:

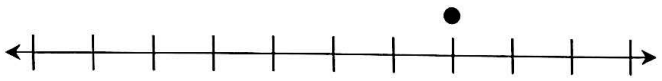
-13, 4, -9, -17, 0, -5

8. Order from greatest to least:

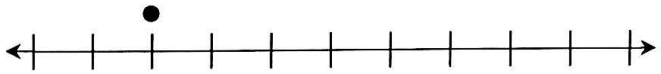
-46, -52, -57, -41, -60

Graph each integer at the dot on the number line. Then, number the rest of the line.

9. 3



10. -16



Find each sum or difference.

11. $-9+(-5)$	**12.** $27+(-19)$	**13.** $-7+31$
14. $8+(-11)$	**15.** $6+(-6)$	**16.** $-51+16$
17. $7-12$	**18.** $-6-17$	**19.** $14-(-12)$
20. $-13-13$	**21.** $-8-(-3)$	**22.** $-4-(-15)$

Find each product or quotient.

23. $7\cdot(-4)$	**24.** $-9\cdot(-8)$	**25.** $-2\cdot16$
26. $17(4)$	**27.** $-5(13)$	**28.** $-6\cdot(-8)$
29. $-40\div(-8)$	**30.** $\frac{27}{-3}$	**31.** $\frac{-56}{4}$
32. $56\div8$	**33.** $\frac{14}{0}$	**34.** $0\div(-8)$

Topic F: Applications with Integer Operations

1. The stock market ended the day on Monday at 179 points. If the market closes the following day 414 points below Monday, find the closing number on Tuesday.

2. Over the course of 4 plays, a football team lost 5 yards, gained 2 yards, lost 8 yards, then gained 14 yards. Find the team's total change in yards on the 4 plays.

3. A car depreciated by $9000 in one year. Find the average change in value each month.

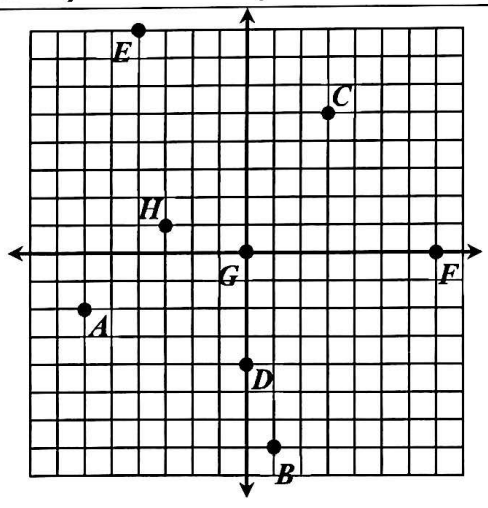
4. Sarah is hiking in a valley at an elevation of -68 feet. If she continues to decend at a rate of 8 feet per minute, find her elevation after 15 minutes.

5. A submarine is located 875 feet below sea level. If a helicopter is located 6,200 feet directly above the submarine, find the altitude of the helicopter.

6. A hot-air balloon is descending at a rate of 185 feet per minute. Find the change in position of the hot-air balloon after 6 minutes.

Topic G: The Coordinate Plane

Identify the ordered pair and location (quadrant or axis) for each point on the graph.



Point	Ordered Pair	Location
A		
B		
C		
D		
E		
F		
G		
H		

Name: _____ **Math 6 Review:** Packet #2

Topic A: Powers, Exponents, and Perfect Squares

Write each product in exponential form.

1. $13 \cdot 13 \cdot 13 \cdot 13 \cdot 13 \cdot 13 \cdot 13 \cdot 13$

2. $(-8) \cdot (-8) \cdot (-8) \cdot (-8) \cdot (-8)$

3. $(-2) \cdot 7 \cdot 15 \cdot (-2) \cdot 7 \cdot (-2) \cdot (-2) \cdot 7$

4. $x \cdot x \cdot y \cdot x \cdot y \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot x$

Write each number as a power of 10.

5. 10,000

6. 100,000,000,000

Evaluate.

7. 4^4

8. 19^2

9. 7^3

10. $(-14)^2$

11. $(-3)^5$

12. $(-5)^2 \cdot (-2)^3$

Indicate whether the number is a perfect square. If yes, rewrite as a number squared.

13. 36

14. 196

15. 180

16. 289

Topic B: Order of Operations

Simplify each expression.

1. $6(-4) + 2(9)$

2. $20 - 3 \cdot 4^2$

3. $\dfrac{8 - 5^2 + 29}{-1 - 2}$

4. $8 \cdot (5 - 2^3) - 28 \div (-4)$	**5.** $\frac{3^4 - 4^2}{-11 + 6}$	**6.** $1\frac{11}{12} - \frac{5}{6} \cdot \frac{9}{10}$

Topic C: Evaluating Expressions		
Evaluate each expression using the given variable replacements.		
1. $4p - 17$ (if p = -3)	**2.** $8c - 3d$ (if c = 2, d = -4)	**3.** $y^2 - 9y$ (if y = -7)
4. $\frac{4}{5}a - \frac{3}{8}b$ (if $a = \frac{5}{8}$, $b = \frac{2}{9}$)	**5.** $\frac{7y + x}{x - 1}$ (if x = -2, y = -4)	**6.** $mn - n^3 \div 2m$ (if m = 8, n = 4)

Topic D: Translating Expressions	
Translate into an algebraic expression using a variable.	
1. "16 subtracted from a number"	**2.** "the product of a number and -9"
3. "twice a number, increased by 7"	**4.** "the sum of one-third of a number and 4"

5. "the quotient of 48 and a number"	**6.** "8 less than the product of a number and 3"
7. Naomi ran a race 7 seconds faster than her friend Jenny. If Jenny ran the race in s seconds, write an expression for Naomi's time.	**8.** Antonio bought x pounds of apples and y pounds of bananas. If apples cost \$1.30 per pound and bananas cost \$0.50 per pound, write an expression for the total cost.

Topic E: Simplifying & Factoring Expressions

Identify the variable terms, coefficients, and constants of each expression.

Expression	Variable Terms	Coefficients	Constant Terms
1. $20-3k+7k-9-k$			
2. $-11-4a+3b-5+a-12b$			

Simplify each expression by combining like terms.

3. $11x-9+3x$	**4.** $-7-3r+5r-12+r$	**5.** $-9c+14d-2d+4c$

Simplify each expression using the distributive property.

6. $3(8+11)$	**7.** $-7(8-2)$	**8.** $9(k+3)$
9. $3(2r-7s)$	**10.** $-5(2v+1)$	**11.** $\frac{5}{4}(28c+8)$

Simplify each expression completely.

12. $20+4(2m-1)$	**13.** $-3(1-4k)+11k$
14. $\frac{1}{3}(6x-30)-x+2$	**15.** $-2(a-b)+5(3a-b)$

Factor each expression using a GCF.

16. $70+28$	**17.** $16-104$	**18.** $6+42$
19. $4x+24$	**20.** $18w-81$	**21.** $48a+20b$

Write three expressions that are equivalent to the given expression.

22. $12n+54$

- _____
- _____
- _____

23. $-4(2p+5q)$

- _____
- _____
- _____

Topic F: Properties

Name the property that justifies each statement. (Property names are given below.)

1. $4\cdot(-9\cdot2)=(4\cdot-9)\cdot2$	**2.** $24c+9=3(8c+3)$
3. $18+(-18)=0$	**4.** $13+(-4)=(-4)+13$
5. $\frac{5}{6}+0=\frac{5}{6}$	**6.** $(2a+b)+5c=2a+(b+5c)$
7. $0=(c-d)\cdot0$	**8.** $(-8r)\cdot1=-8r$
9. $18+(2\cdot4b)=18+(4b\cdot2)$	**10.** $\frac{2}{9}\cdot\frac{9}{2}=1$
11. $7(v-1)=7v-7$	**12.** $-3k+3k=0$

- Commutative Property of Addition
- Commutative Property of Multiplication
- Associative Property of Addition
- Associative Property of Multiplication
- Distributive Property
- Identity Property of Addition
- Identity Property of Multiplication
- Inverse Property of Addition
- Inverse Property of Multiplication
- Multiplication Property of Zero

Name: _____ **Math 6 Review:** Packet #3

Topic A: Solving One-Step Equations

Solve each equation. Check all solutions.

1. $x+7=23$	**2.** $-42=6p$	**3.** $y-5=-8$
4. $\frac{a}{-4}=-6$	**5.** $7=m-(-9)$	**6.** $-8c=-72$
7. $r+(-4)=11$	**8.** $\frac{k}{1.4}=28$	**9.** $32.1=4.7+v$
10. $x+\frac{1}{6}=\frac{13}{15}$	**11.** $1\frac{7}{9}=\frac{5}{6}m$	**12.** $c\div\frac{5}{12}=2\frac{7}{10}$

Translate each sentence into an equation. Do not solve.

13. "The sum of 9 and a number is -4"	**14.** "The quotient of a number and 7 is -12."
15. "The product of a number and -3 is -42."	**16.** "8 less than a number is 34."

Topic B: One-Step Equation Word Problems

Use a variable to write a one-step equation to solve the problem. Then solve.

1. A large bag of lollipops were equally distributed into 28 smaller bags. If each bag contains 6 lollipops, how many total lollipops are there?

Equation	Solution

2. Julia is buying a watch for $105. If she is using a gift card that has a remaining balance of $28.43, how much will she have remaining to pay?

Equation	Solution

3. Devin's paycheck was $179 less this week than his paycheck last week. If he made $348 this week, how much did he make last week?

Equation	Solution

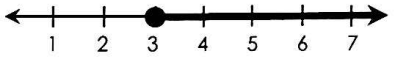
4. Cheryl has been teaching for 18 years. If this is two-thirds the number of years that Tom has been teaching, how long has Tom been teaching?

Equation	Solution

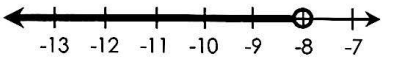
Topic C: Representing Inequalities

Write an inequality to represent the graph.

1.



2.



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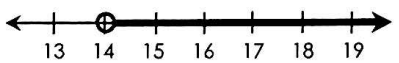
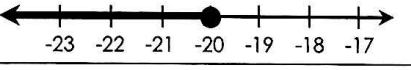
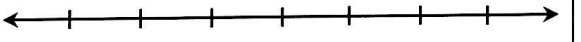
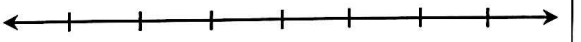


4.



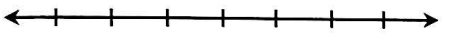
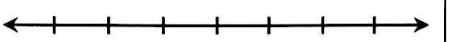
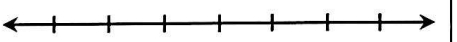
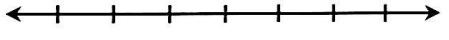
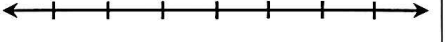
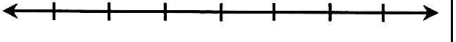
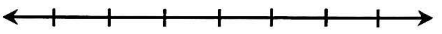
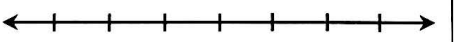
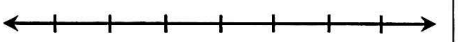
Write each sentence as an inequality, then graph.

Verbal Description	Inequality	
5. "A number is less than 12."		
6. "A number is at least -5."		
7. "A number is a maximum of 9."		

8. "-2 is more than a number"		
9. "The number of points scored in each game was no less than 16."		

Topic D: Solving One-Step Inequalities

Solve and graph the solution to each inequality.

1. $w - 4 \geq 5$ 	**2.** $7c > -28$ 	**3.** $\frac{a}{-3} \geq -5$ 
4. $-8 > m + 3$ 	**5.** $\frac{k}{4} \leq -2$ 	**6.** $-7p < 14$ 
7. $y - (-6) \geq 13$ 	**8.** $1.8r < 45$ 	**9.** $z - 1\frac{2}{3} \geq \frac{5}{6}$ 

Determine whether the given value is a solution to the inequality.

10. $x \leq -9;\ x = -13$	**11.** $n > -8;\ n = -25$	**12.** $c \geq \frac{3}{4};\ c = \frac{17}{20}$

13. $k+9<4;\ k=-5$	**14.** $7.5 \geq z-3.89;\ z=11.088$	**15.** $\frac{r}{-5} \leq -9;\ r=10$

Write each sentence as an inequality. Do not solve.

16. "The difference of a number and 7 is greater than 20."	**17.** "15 more than a number is at most -4."
18. "-42 is less than or equal to the product of a -6 and a number."	**19.** "A number divided by 5 has a minimum value of 14."

Topic E: One-Step Inequality Word Problems

Use a variable to write a one-step inequality to solve the problem. Then solve.

1. Jack has lost a minimum of 25 pounds in the past six months. If his current weight is 248, what was his starting weight?

Inequality	**Solution**

2. The cost of a case of water is $3.20. If you can spend at most $20, how many cases can you buy?

Inequality	**Solution**

3. Lana would like to spend at least $15 on each of her 9 grandchildren for Christmas. How much money will she need?

Inequality	**Solution**

4. Trevor and Cara played in a bowling tournament. Their goal was a combined score of 425. If they did not meet their goal and Trevor scored 232, what was Cara's score?

Inequality	**Solution**

Name: _____ **Math 6 Review:** Packet #4

Topic A: Writing Ratios, Simplifying Ratios, Equivalent Ratios

Alexa's math grades are given in the table below. Write each ratio in simplest form in three ways.

A	𝍸 𝍸 ||
B	𝍸 |||
C	||||

1. A's to B's

2. B's to total grades

3. C's to B's

List two equivalent ratios for each ratio.

4. 8:3

5. $\frac{18}{45}$

Fill in a box with a value that makes the ratios equivalent.

6. 7 : 3 and ☐ : 12

7. $\frac{45}{36}$ and $\frac{15}{\square}$

8. $\frac{24}{\square}$ and $\frac{8}{18}$

Determine whether the ratios are equivalent.

9. $\frac{42}{56}$ and $\frac{6}{8}$

10. 4 to 9; 16 to 36

10. $\frac{5}{12}$ and $\frac{15}{48}$

12. To create a certain color, Mari mixes 3 drops of blue food coloring for every 5 drops of red food coloring. If she uses 18 drops of blue food coloring, how many drops of red does she need?

13. There are 56 girls and 32 boys in band. The ratio of girls to boys that play clarinet in the band is the same as the ratio of girls to boys in the entire band. If there are 7 girls that play clarinet, how many boys play clarinet?

Topic B: Ratio Tables and Graphs

Complete each ratio table.

1.

White Roses	Red Roses
5	8
	16
25	

2.

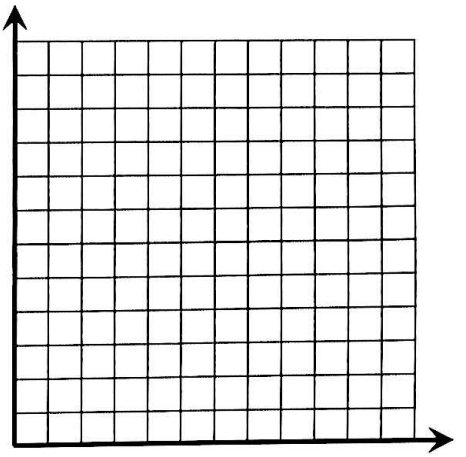
Sugar (tsp)	Calories
1	
5	80
12	

3.

Tickets	Cost ($)
1	
2	15
6	

4. Jeremy is a car salesman. Last year, he sold two trucks for every three cars he sold. Create a ratio table and graph to show this relationship.

Trucks				
Cars				



Topic C: Unit Rates; Comparing Rates

Write each rate as a unit rate.

1. 172 miles in 4 hours

2. 15 grams of fat in 6 cookies

3. 336 points in 16 games

4. If it took 27 minutes to fill a 432-gallon hot tub, find the number of gallons per minute.

5. The table below gives the amount of time, in minutes, it took three people to run a certain distance. Who ran the least minutes per mile?

	Miles	Minutes
Molly	8	52
Nathan	5	36
Darnell	12	72

Determine if Option A or Option B is the better deal. Justify your answer using unit prices.

6.

- ❑ **Option A:** $11 for 5 books — **Unit Price:** _____
- ❑ **Option B:** $30 for 12 books — **Unit Price:** _____

7.

- ❑ **Option A:** 28 ounces of orange juice for $3.92 — **Unit Price:** _____
- ❑ **Option B:** 40 ounces of orange juice for $4.80 — **Unit Price:** _____

Topic D: Proportional Relationships

Determine whether the quantities shown in each table or graph represent a proportional relationship. If yes, give the constant of proportionality, k.

1.

Time (h)	Earnings ($)
2	28
3	42
5	70
9	126

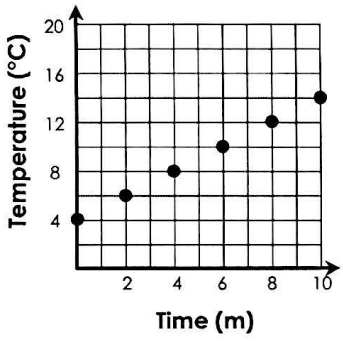
2.

Time (s)	Distance (ft)
5	16
10	32
15	48
20	64

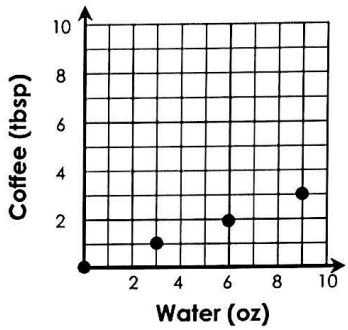
3.

Boys	Girls
2	8
5	20
12	42
16	52

4.



5.



Topic E: Converting Fractions, Decimals, and Percents

Complete the chart below.

	FRACTION	DECIMAL	PERCENT
1.	$\frac{7}{25}$		
2.	$\frac{9}{5}$		
3.	$\frac{1}{8}$		
4.	$\frac{5}{12}$		
5.		0.325	
6.		2.1	
7.		0.78	
8.			87.5%

	FRACTION	DECIMAL	PERCENT
9.			135%
10.			4%

Topic F: Comparing Fractions, Decimals, and Percents

Compare by placing a <, >, or = symbol in the circle.

1. 120% ◯ 0.975

2. $\frac{13}{20}$ ◯ 8%

3. $\frac{3}{25}$ ◯ $\frac{1}{8}$

4. 130% ◯ $1\frac{1}{3}$

5. $\frac{17}{20}$ ◯ $\frac{5}{6}$

6. 9% ◯ $\frac{7}{40}$

7. Order from <u>least to greatest</u>:

$\frac{2}{5}$, 30%, 1.2, $\frac{3}{8}$

8. Order from <u>greatest to least</u>:

$\frac{2}{3}$, 8%, $\frac{7}{10}$, 0.65

Topic G: Percent of a Number

Find the percent of each number.

1. 70% of 60

2. 35% of 140

3. 4% of 275

4. 56% of 95	**5.** 180% of 15	**6.** 325% of 40

7. Chelsea answers customer service calls for a company for $14.50 per hour. The company is offering her a new position that pays 120% more per hour than her previous position. If she accepts, what will be her new pay?

8. There are 180 days in a school year. If your teacher says you have completed 65% of the school year, how many days do you have left of school?

Topic H: Negative Rational Numbers (Fractions and Decimals Only)

Give each absolute value.

1. $\left\lvert\frac{2}{9}\right\rvert$	**2.** $\lvert -3.45\rvert$	**3.** $\left\lvert -1\frac{6}{7}\right\rvert$	**4.** $\lvert 0.194\rvert$

Compare by placing a <, >, or = symbol in the circle.

5. $-\frac{5}{8} \bigcirc -\frac{11}{16}$	**6.** $-1\frac{5}{6} \bigcirc -1\frac{3}{4}$	**7.** $-7.918 \bigcirc -7.04$

8. Order from <u>least to greatest</u>:

$$-0.098, -\frac{1}{4}, -0.12$$

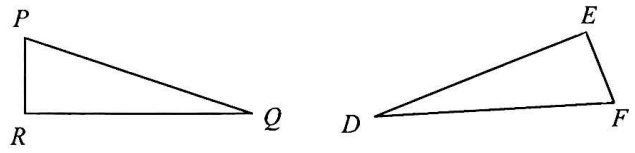
9. Order from <u>greatest to least</u>:

$$-1\frac{7}{20}, -1.8, -1\frac{1}{2}$$

Name: _____ **Math 6 Review:** Packet #5

Topic A: Congruent Segments, Angles, & Polygons

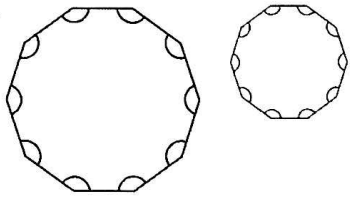
1. If the figures below are congruent, list all congruent sides and angles and place markings on the figures to show the relationships.



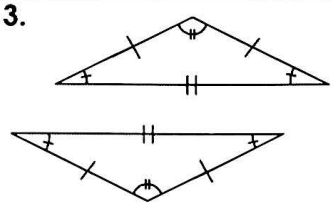
Sides	Angles

Determine whether the figures are congruent.

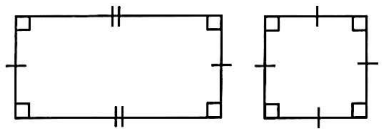
2.



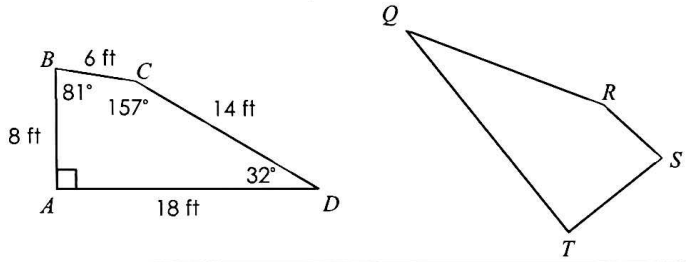
3.



4.



5. The figures below are congruent. Use the figures below to answer each question.



a) What side corresponds to $\overline{CD}$?

b) What is the length of $\overline{ST}$?

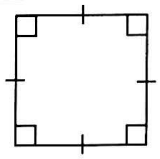
c) What angle corresponds to $\angle B$?

d) What is the measure of $\angle R$?

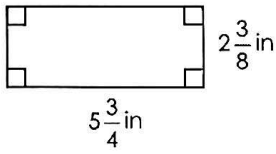
Topic B: Perimeter and Area of Rectangles, Parallelograms, Triangles, & Trapezoids

Find the perimeter of each figure.

1.

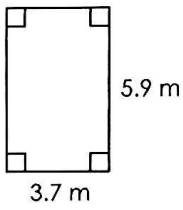


2.

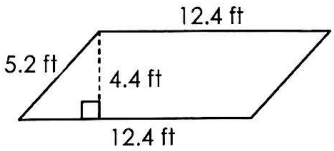


Find the area of each figure.

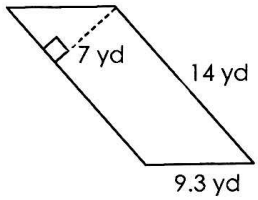
3.



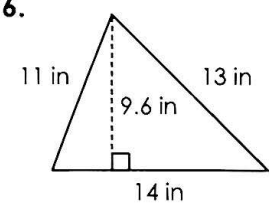
4.



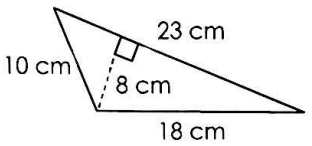
5.



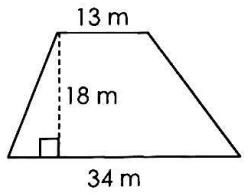
6.



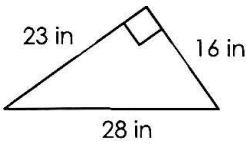
7.



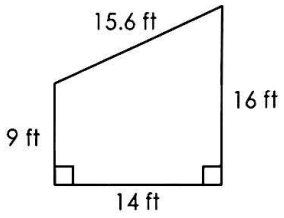
8.



9. Abby is covering a corner shelf in her kitchen with shelving liner. The dimensions of the shelf are given below. What is the minimum amount of liner she will need?



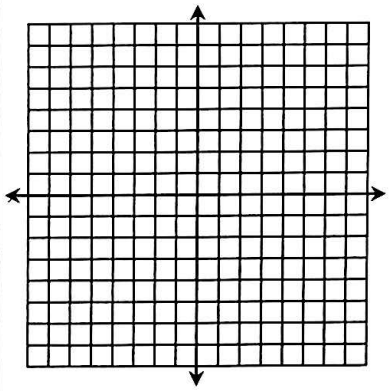
10. Gino is painting a wall in his living room. The dimensions of the wall are given below. Find the area of the wall that he will cover.



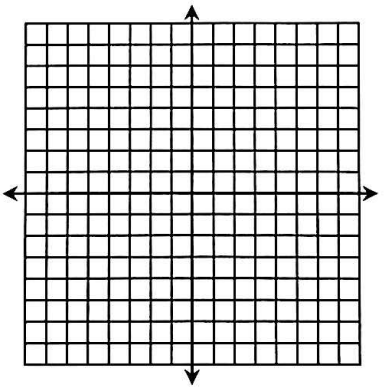
Topic C: Polygons on the Coordinate Plane

Graph the figure with the given vertices, then find its perimeter and area.

1. $J(-5, 1)$, $K(2, 1)$, $L(2, -6)$, $M(-5, -6)$

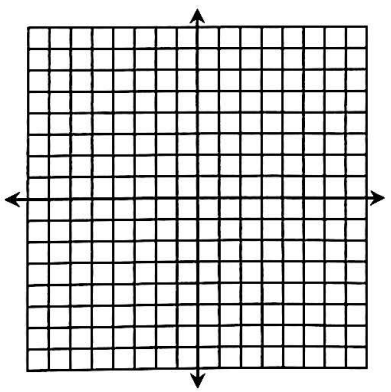


2. $E(-1, 7)$, $F(3, 7)$, $G(3, -2)$, $H(-1, -2)$

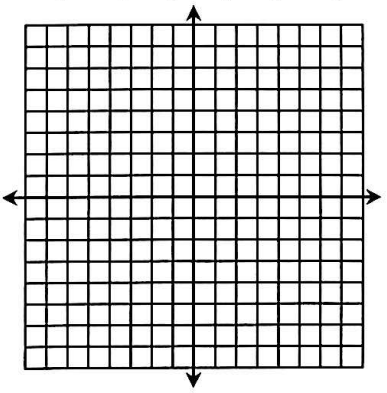


Graph the figure with the given vertices, then find its area.

3. $R(-5, 4)$, $S(8, 1)$, $T(-5, -4)$



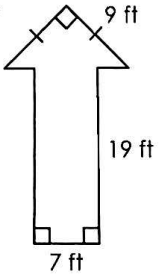
4. $A(-7, 3)$, $B(0, 3)$, $C(3, -7)$, $D(-4, -7)$



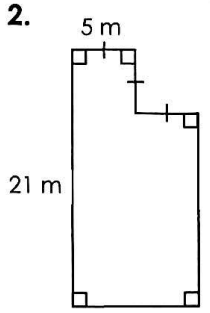
Topic D: Area of Composite Figures

Find the area of each figure.

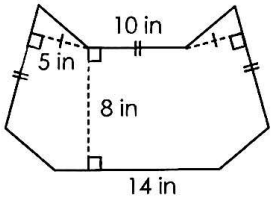
1.



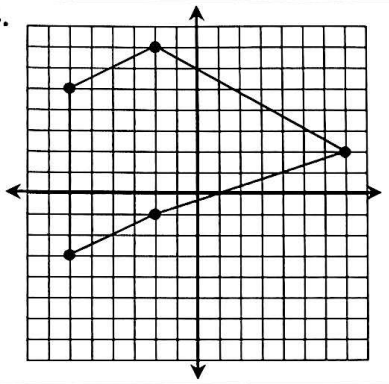
2.



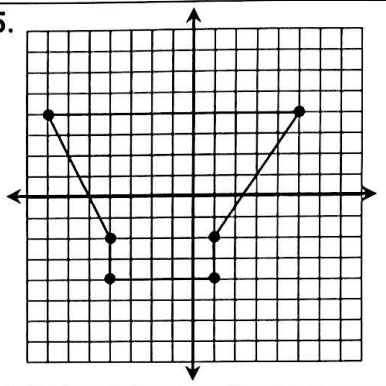
3.



4.



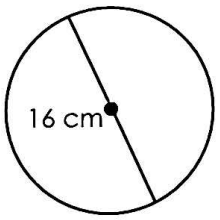
5.



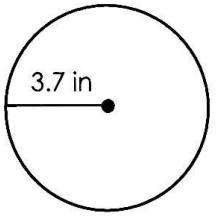
Topic E: Circumference & Area of Circles

Find the circumference of each circle. Use 3.14 for pi.

1.

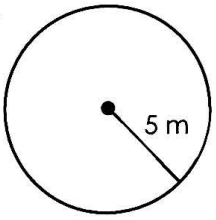


2.

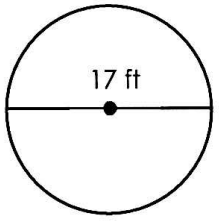


Find the area of each circle. Use 3.14 for pi.

3.



4.



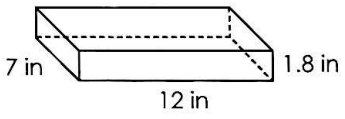
5. Barry has a circular table with an 7-foot diameter. If he would like to cover the table with newspaper for an art project, what is the minimum amount of paper he will need?

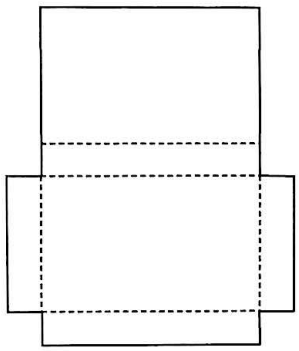
6. Rachel has a circular pen for her chickens with a radius of 15 feet. If she needs to replace the fencing, how much fencing will she need?

Topic F: Surface Area of Prisms & Pyramids

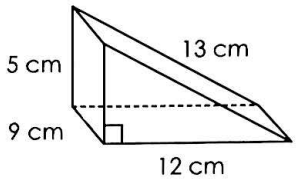
Find the surface area of each figure using the given net.

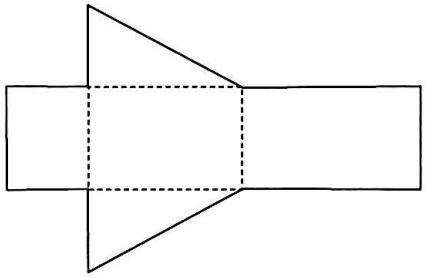
1.



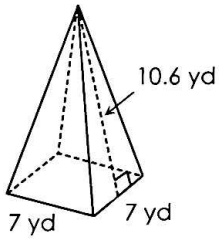


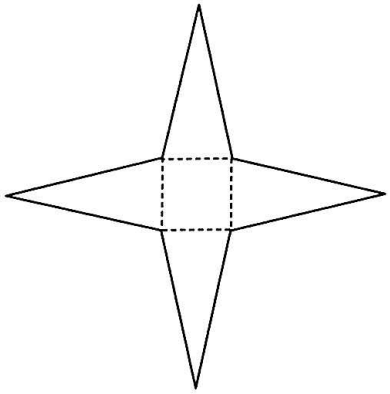
2.



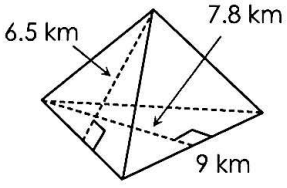


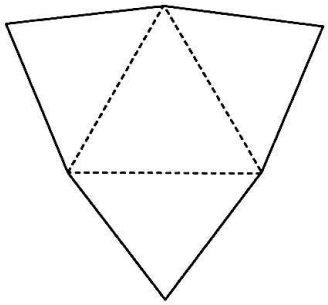
3.



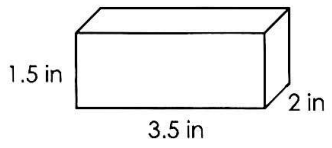


4. Assume an equilateral base.

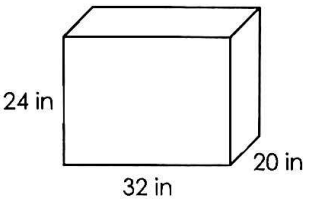




5. A bar of soap is in the shape of a rectangular prism with the dimensions given below. The manufacturing company needs to know the minimum amount of material needed to construct a box for the soap.



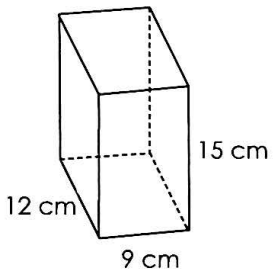
6. Kevin is planning to build a jumping box to use with his daily workouts. The dimensions of the box he wants to build are given below. What is the minimum amount of plywood he will need?



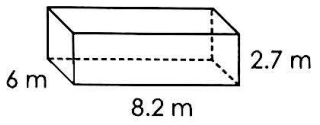
Topic G: Volume of Rectangular Prisms

Find the volume of each rectangular prism.

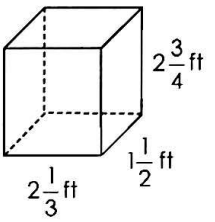
1.



2.



3.



4. An inground pool is in the shape of a rectangular prism. The pool is 18 feet long by 12 feet wide with a depth of 5 feet. What is the maximum amount of water the pool can hold?

5. The bed of a dump truck in the shape of a rectangular prism is completely filled (but not overfilled) with 567 cubic feet of dirt. If the bed is 18 feet long by 7 feet wide, how deep is the bed?

Name: _____ **Math 6 Review:** Packet #6

Topic A: Measures of Center & Range

Find the mean, median, mode(s), and range for each of the following data sets.

1. The high temperature for the past nine days:
{57, 61, 57, 58, 58, 57, 61, 54, 68}

Mean:
Median:
Mode(s):
Range:

2. The prices, in dollars, of six laptops: **{520, 750, 700, 540, 460, 390}**

Mean:
Median:
Mode(s):
Range:

3. Marissa's grades on nine tests are given below. Identify the outlier, then find the measures with and without the outlier.
{92, 88, 88, 92, 100, 88, 37, 98, 82}

Identify the Outlier:

With Outlier	**Without Outlier**
Mean:	Mean:
Median:	Median:
Mode(s):	Mode(s):
Range:	Range:

Determine which measure of center is most appropriate. Explain your reasoning.

4. Weights, in pounds, of 15 dogs: **{55, 62, 48, 59, 74, 165, 70, 56, 82, 64, 71, 60, 53, 78, 63}**

Best Center: _____ Why? _____

5. Ages of 12 players on a basketball team: **{11, 10, 11, 11, 8, 11, 12, 11, 9, 10, 11, 12}**

Best Center: _____ Why? _____

6. The speed of the last 10 pitches thrown by a pitcher: **{90, 92, 85, 88, 94, 86, 93, 90, 88, 95}**

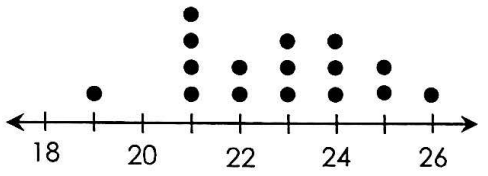
Best Center: _____ Why? _____

7. All digital cameras in an electronics store are on sale for 20% off for the weekend. How does this affect the mean, median, mode, and range of prices of the cameras?

8. A football team has scored a different number of points in each of their first five games. If they score more points in the sixth game than any prior game, how will this affect the mean, median, mode, and range number of points per game scored?

Topic B: Dot Plots & Stem-and-Leaf Plots

The ages of the players on a hockey team are shown below.



Ages (Years)

1. Compare the median and mode ages.

2. How many players are no more than 24 years old?

The time it took a group of students to complete a test is shown below.

Minutes

Stem	Leaf
2	5 8
3	0 4 7 9
4	1 3 3 5 7
5	6

Key: 2 | 5 = 25 minutes

3. Find the mean.

4. How many students took more than 30 minutes to complete the test?

Topic C: Mean Absolute Deviation

Find the mean absolute deviation of each set of data.

1. The heights, in inches, of six people:
{62, 65, 68, 77, 71, 59}

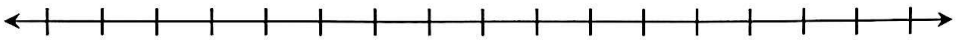
2. The average heart rates, in beats per minute, of five people in a cycling class:
{145, 168, 156, 134, 162}

3. Two classes, Class A and Class B, took the same test. Both classes had the same mean score on the test. However, the mean absolute deviation of Class A was 10 and Class B was 2. What does this information reveal about the individual scores in each class?

Topic D: Box-and-Whisker Plots

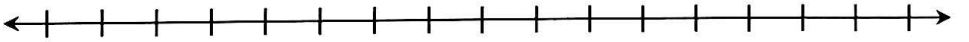
Draw the box-and-whisker plot, then give the five-number summary, range, and interquartile range (IQR).

1. The height, in inches, of nine trees at a tree farm:
{56, 68, 45, 65, 63, 49, 75, 51, 72}



Minimum: _____
Lower Quartile: _____
Median: _____
Upper Quartile: _____
Maximum: _____
Range: _____
IQR: _____

2. Points scored by a football team in each of their sixteen games:
{17, 21, 25, 23, 20, 27, 16, 24, 17, 14, 21, 28, 23, 30, 14, 27}



Minimum: _____
Lower Quartile: _____
Median: _____
Upper Quartile: _____
Maximum: _____
Range: _____
IQR: _____

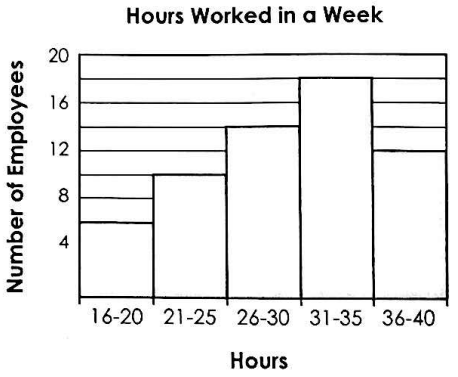
Topic E: Histograms

1. Students were asked the numbers of letters in their last name. The results are shown below. Organize the data in a frequency table, then make a histogram to display the data.

{5, 8, 9, 11, 9, 6, 7, 5, 5, 10, 8, 4, 6, 7, 11, 4, 3, 8, 8, 5, 10, 6, 5, 8, 12}

Interval	Frequency

The histogram below shows the number of hours worked in a single week by each employee at a company.



2. How many employees worked 30 hours at most?

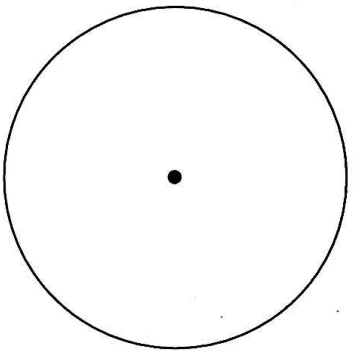
3. What percent of the employees worked between 16 and 20 hours?

4. What percent of the employees worked a minimum of 26 hours?

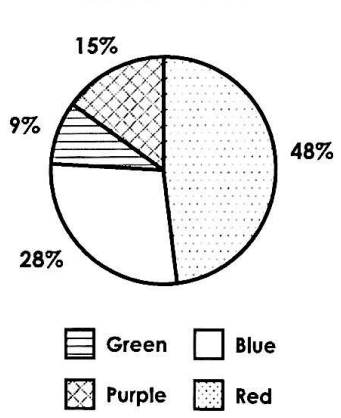
Topic F: Circle Graphs

1. A group of students were asked how they get to and from school each day. The results are shown in the table below. Make a circle graph to display the data.

Transportation to/from School	Number of Students
Bus	87
Bike	18
Car	33
Walk	12



A new jacket comes in four colors. The circle graph below represents the last 200 jacket orders.



2. How many of the orders were for a green jacket?

3. How many of the orders were for a purple or a red jacket?