Monroe Township Middle School

6TH GRADE MATHEMATICS PREPARATION PACKET

2025-2026

ALL PROBLEMS MUST BE COMPLETED IN **PENCIL** AND **WITHOUT A CALCULATOR**

The packet is a representation of the types of items you'll need to have mastered BEFORE 6th Grade Math, so we strongly encourage that you include this packet in your summer festivities!
You'll be responsible for handing in the completed packet with all work shown ON THE FIRST DAY OF SCHOOL.

FIRST/LAST NAME: _____

OPERATIONS AND ALGEBRAIC THINKING

1) Write a numerical expression for the product of eight and four.

2) Write the first five terms in the pattern, starting with the number zero:

   The rule: add 19

   _____, _____, _____, _____, _____

3) Simplify the expression   **28 – 12 ÷ 3 + (22-9)**

4) Complete the table. Write a rule for completing the table:

Input	Output
4	28
5	35
8	56
	77
13	

Rule: _____

5) The table below shows the number of gallons of gasoline in the gas tank each second as it fills. If the pattern continues, how much gas will be in the tank after 6 seconds?

Seconds Pumping Gasoline	1	2	3	4
Gallons in the Tank	0.35	0.70	1.05	1.40

6) Which expression shows how to solve 3×78 with mental math.

    A. $(3 \times 7) + (3 \times 8)$

    B. $(3 \times 70) + (3 \times 8)$

    C. $(3 \times 70) + (3 \times 80)$

    D. $(7 \times 30) + (8 \times 3)$

7) Write the number *nine and thirty − five thousandths* in standard form.

8) Write the following in standard form.

$$(7 \times 100) + (5 \times 10) + (3 \times 1) + \left(4 \ \times \ \frac{1}{10}\right) + \left(9 \ \times \ \frac{1}{100}\right)$$

9) Write 10^7 in standard form. _____

10) Order the following from **greatest to least**:

$$47.021, \quad 47.012, \quad 47.102, \quad 47.210$$

_____, _____, _____, _____

11) Megan's check for lunch at Luigi's Pizzeria was $11.78. She paid with a $20 bill. How much change did she receive?

12) Describe the rule for the following pattern and name the next three terms.

180,000   18,000   1,800   180   _____   _____   _____

Rule: _____

13) Insert $>$, $<$ or $=$ to make the following statement true. 0.78 _____ 0.091

14) Write 5,627.9 in expanded form.

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15) What is the **place value** of the underlined digit in the number below?

672.38**9**   _____

16) What is the **value** of the underlined digit in the number below?

68,073.2**9**5   _____

17) Round 284.563 to the nearest hundredth. _____

18) Simplify the expression. $18 \div 3 + (30 - 20 + 4) \times 3$

NUMBER AND OPERATIONS – DECIMALS

Directions: Find the sum, difference, product, or quotient. Show all work.

19) $5{,}472 \div 12 =$	**20)** $1{,}346 \times 49 =$
21) $17 + 8.7 =$	**22)** $12{,}894 \div 2 =$

23) $8,543 - 210 =$

24) $10,000 - 187 =$

25) $7 - 3.98 =$

26) $786 + 1,238 + 27 + 5 =$

NUMBER AND OPERATIONS – FRACTIONS

27) Katie works 2 days a week after school. On Monday she works $3\frac{1}{3}$ hours and on Wednesday she works $4\frac{1}{2}$ hours. How many more hours does she work on Wednesday?

28) It takes $\frac{5}{6}$ cups of ice cream and $\frac{3}{4}$ cups of milk to make a milkshake. How many cups is that altogether?

29) Jimmy lives $\frac{4}{5}$ of a mile from school. Billy lives twice as far as Jimmy. How far does Billy live from school?

30) Three students shared a pizza. One student ate $\frac{1}{6}$ of the pizza, another ate $\frac{1}{4}$ of the pizza and the third student ate the rest. What fraction of the pizza was the third student's portion?

31) On a class trip, $\frac{2}{3}$ of the seats on the bus are reserved for students and $\frac{1}{7}$ of the seats are reserved for teachers. What fraction of the seats are available for additional chaperones?

Directions: Find the sum or difference. Show all work.

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32) $8 - 3\frac{2}{3} = $ =

33) $\frac{2}{5} + \frac{1}{4} = $

34) $2\frac{4}{9} - \frac{1}{5} =$

35) $22 - 8\frac{1}{6} =$

36) $1\frac{1}{6} - \frac{2}{3} =$

37) $7\frac{1}{6} + 2\frac{3}{4} =$

MEASUREMENT AND DATA

38) Jack is hiking a 3-mile trail. He has hiked 1,000 ft. How many feet does Jack have left to hike?

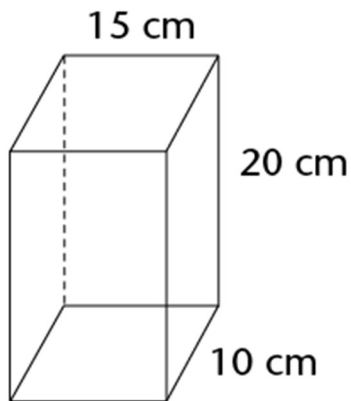| How long is the trail in feet? ***1 mile = 5280 feet***	How many more feet does he have left to hike?

39) Find the area of the rectangle below. **Label your answer.**
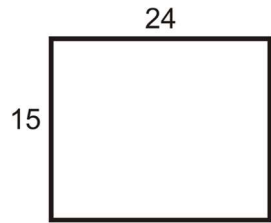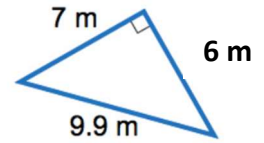
	Show your work here.
24 15 ⬜	

40) What is the volume of the figure shown? **Label your answer.**

|	Show all work here.
15 cm 20 cm 10 cm	

41) Jessica made a time capsule using a box that is 18 in long, 12 in wide and 16 in tall. What is the volume of the time capsule?

42) Classify each triangle below by its **sides** and **angles:**
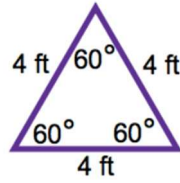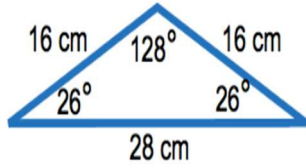
Side:	Side:	Side:
Angle:	Angle:	Angle:

43) A class was picking straws from a big pile and then using a ruler to measure the length of each straw. They recorded the lengths of the straws picked in the line plot below. Use the line plot to answer the questions that follow.


Lengths of Straws

Length (inches)
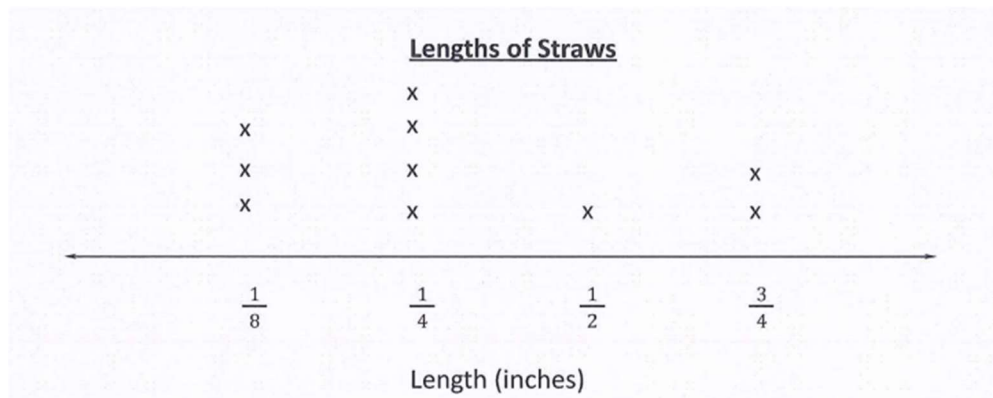
a) Which straw length was the most frequent?	**b)** How many students are in the class?

GEOMETRY

44) Which quadrilateral has two acute angles, two obtuse angles, and two pairs of opposite parallel sides?

A   B   C   D   E

45) Plot **and** label the following points on the coordinate plane:

A (2, 3)   **B** (2, 8)   **C** (5, 8)   **D** (5, 3)

- Connect the points

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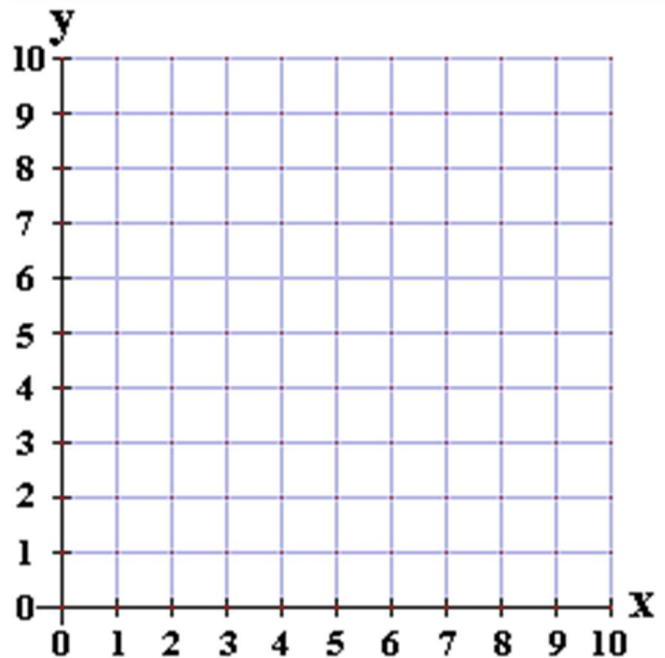**GEOMETRY**

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A   B   C   D   E
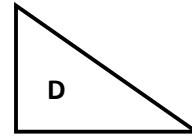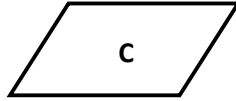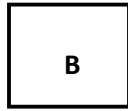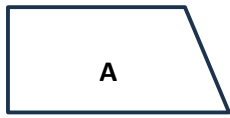
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- Connect the points

- Name the figure _____

- Find the area of the figure _____

46) Use the clues below to identify the figure:

- The figure has two obtuse angles and two acute angles.
- The figure has four sides.
- All sides are congruent.
- The figure's opposite sides are parallel.

Name of the figure: _____

Directions: Write the letter of all the shapes above that fit into each of the
categories below. *(You may use a shape more than once.)*

47)
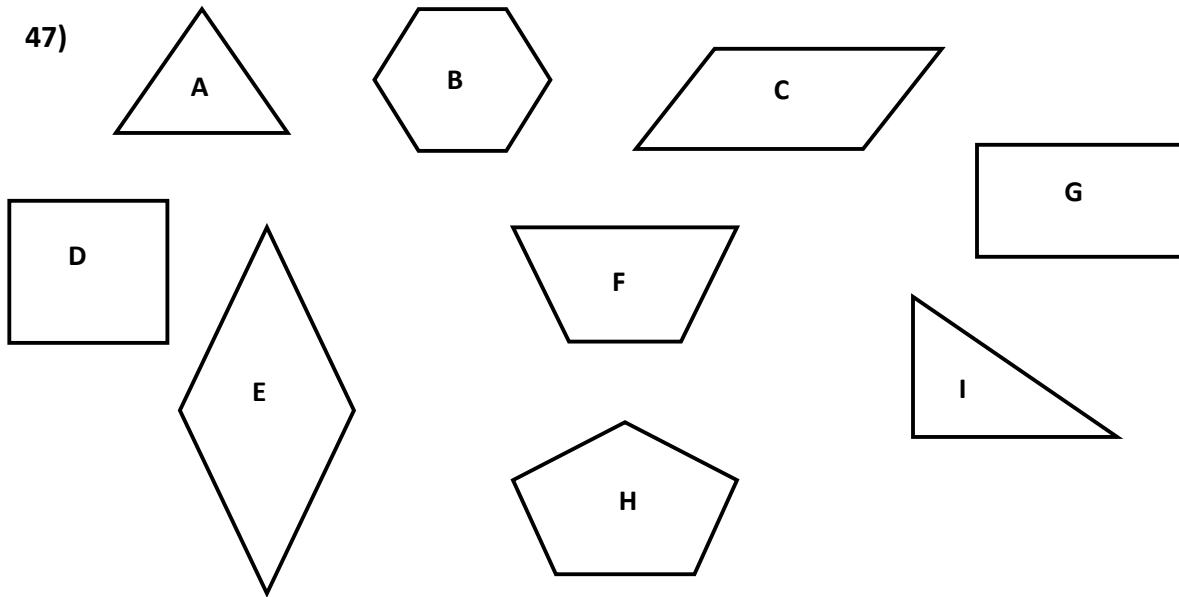
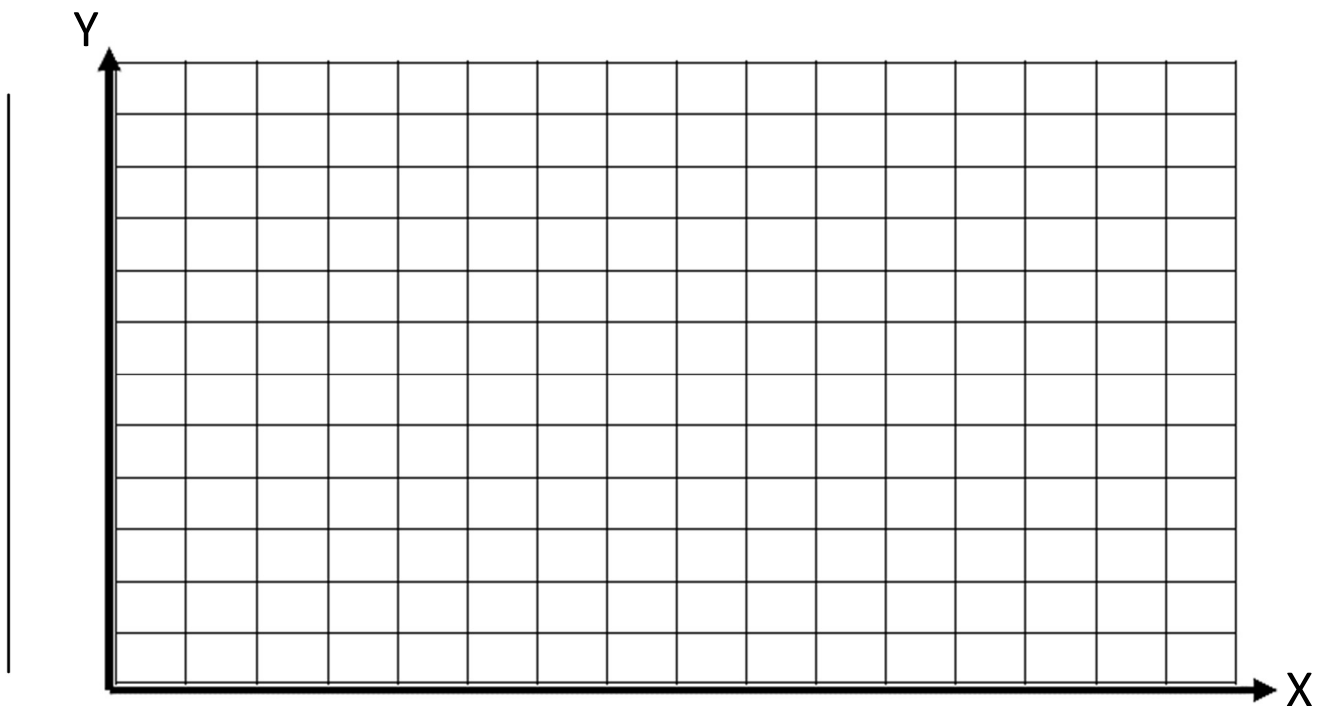

Contain at least 1 right angle _____

Quadrilateral _____

Rectangle _____

Parallelogram _____

48) The temperature in Noelle's house from 9:00 a.m. **to** 7:00 p.m. is recorded in the table below. Make a <u>line graph</u> to display the information. **Remember to label the graph on both the x and y axes and give it a title.**

Time	9 am	11 am	1 pm	3 pm	5 pm	7 pm
Temperature	82˚F	80˚F	83˚F	88˚F	85˚F	80˚F

Title: _____

Y

X

_____

What is the **approximate** temperature in Noelle's house at 2:00 pm? _____

What is the **difference** in temperature from 11:00 a.m. to 1:00 pm? _____