Monroe Township School District
Monroe Township, New Jersey

2025 Middle School 7ᵗʰ **Grade** *PREPARATION PACKET*

Welcome to 7th Grade Mathematics! Our 7th Grade Mathematics Course is a comprehensive survey course that will provide you with the fundamental tools of mathematical understanding that will support you in all your high school courses. Since you will be taking *7th Grade Mathematics* after successful completion of 6th Grade Mathematics, the **Monroe Township Middle School 7th GRADE PREPARATION PACKET** contains review material of the 6th grade concepts, skills, and procedures that should be mastered **BEFORE** entering 7th grade in the fall. Essentially, this packet provides a review of the major 6th grade topics as well as a preview of 7th grade topics. The sections are based on the NJ 2016 Student Learning Standards.

Here are some websites you might find particularly useful:

- http://www.khanacademy.org/
- http://www.studyisland.com/web/index/
- http://www.ixl.com/math/

This collection of problems will identify those concepts that you have mastered as well as those you will need to practice and review. You are expected to seek extra help immediately on those concepts with which you have not demonstrated proficiency. Be resourceful – use the online resources!

SOLVE THESE PROBLEMS <u>WITHOUT</u> THE USE OF A CALCULATOR AND <u>SHOW ALL WORK</u>

<u>You will be responsible for handing in the completed packet with all work shown ON THE FIRST DAY OF SCHOOL.</u> The problems here are very representative of the types of items you will need to have mastered BEFORE 7th Grade Math… so we strongly encourage that you include this packet in your summer festivities! Good luck and enjoy! ☺

Fun Fact Trivia Challenge: Who is the famous mathematician shown here and why did he think the number 1729 was so amazing?

RATIOS AND PROPORTIONAL REASONING

1. You get paid $20 for 4 hours of work. What is your hourly rate?

    ANSWER:_____

2. A volleyball team won 10 of its 16 games. What is the win-loss ratio?

    ANSWER:_____

3. The adult - child ratio at a local daycare center is 3 to 16. At the same rate, how many adults are needed for 48 children?

    ANSWER:_____

4. Decide whether the pair of ratios form a proportion $$\frac{15}{12} \overset{?}{=} \frac{4.5}{3.6}$$

    ANSWER:_____

5. Solve the proportion $$\frac{y}{10} = \frac{3}{5}$$

    ANSWER:_____

6. Which is a better buy, 14oz for 98¢ or 8oz for 64¢?

    ANSWER:_____

7. Complete the ratio table below.

72	36	24	12
126			

    ANSWER:_____

THE NUMBER SYSTEM

8. 4 students equally share $\frac{3}{4}$ of a pizza. How much of the pizza does each student get?

ANSWER:_____

9. What is the area of a rectangular parcel of land that is $\frac{7}{8}$ mile by $1\frac{1}{2}$ miles?

ANSWER:_____

10. Ms. Pike is bagging snacks for a class trip. She has 72 pretzels rods and 48 pieces of string cheese. What is the largest number of snack bags she can make so that the bags are all the same and there is nothing left over?

ANSWER:_____

11. The beacon on the cell phone tower blinks every 5 seconds and the beacon on the water tower blinks every 8 seconds. The lights blink together. How many seconds will pass before the two lights blink together again?

ANSWER:_____

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

12. **37.65 - 4.238**

ANSWER:_____

13. **297.57 ÷ 6.5**

ANSWER:_____

14. **74,404 ÷ 356**

ANSWER:_____

15. **417 + 37.95**

ANSWER:_____

16. **12.08 × 35.2**

ANSWER:_____

17. Complete the table.

Fraction	Decimal	Percent
$\dfrac{4}{5}$		
	0.55	
		35%

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

18. $2\dfrac{1}{2} - \dfrac{7}{8} =$

ANSWER:_____

19. $4\dfrac{3}{6} \times \dfrac{1}{9} =$

ANSWER:_____

20. $\dfrac{5}{6} \div 12 =$

ANSWER:_____

EXPRESSIONS AND EQUATIONS

21. Simplify $3^3 \div 9 + 15 \times 4$

ANSWER:_____

22. Evaluate for $x = 7$ $4x + 17$

ANSWER:_____

23. Solve $x - 10 = 23$

ANSWER:_____

24. Simplify $48 - 2 \times 4^2 \div 8 + 13$

ANSWER:_____

25. Write an algebraic expression for "a number p increased by 7"

ANSWER:_____

26. Write an expression equal to $x + x + x + x$

ANSWER:_____

27. Use the distributive property to write an equivalent expression for $4(x - 2)$.

ANSWER:_____

28. Solve the equation. $3x = 15$

ANSWER:_____

29.   Jack has $25 to spend at the mall. Write an inequality that expresses symbolically the amount of money, *m,* that Jack can spend.
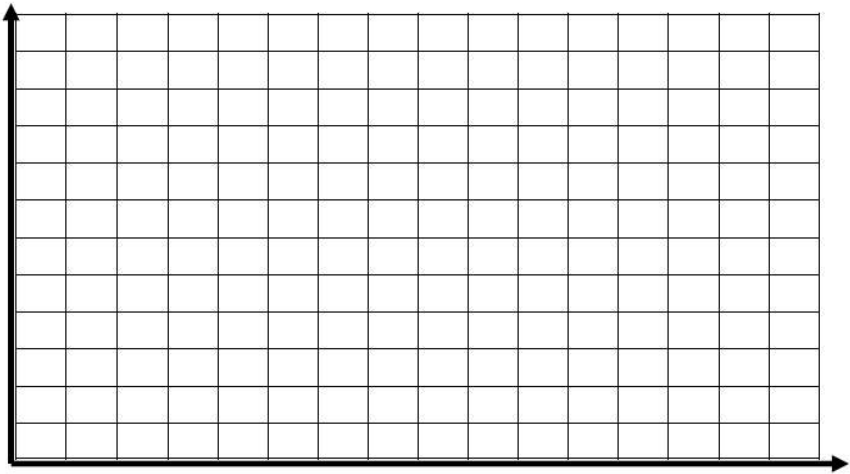
                                        ANSWER:_____

30.   Find the width of a rectangle with a length of 18cm and an area of 72cm^2.

                                        ANSWER:_____

31.   Laura has pledges of $5 for each mile she walks in the Juvenile Diabetes Walkathon fundraiser.

   • Use the table below to record the miles walked and the money earned for miles **0 through 6.**
   • Use the data to make a line graph on the grid. Remember to select a scale and label the axes.
   • Write a rule relating miles walked to money collected.

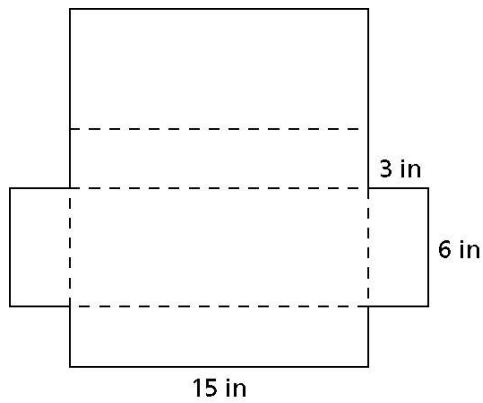| Miles	Money

Rule: _____

GEOMETRY

32. This net can be folded on the dashed lines to make a box.
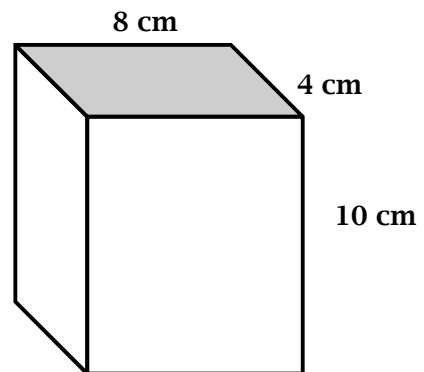
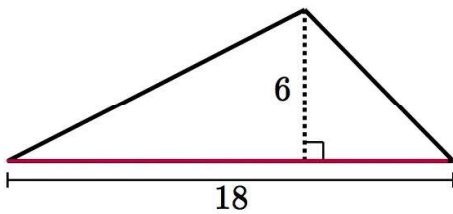   What is the surface area of the box?   ANSWER:_____

    3 in

    6 in

    15 in

33.   Name the figure at the right below. _____

    What is the volume of the figure?   ANSWER:_____
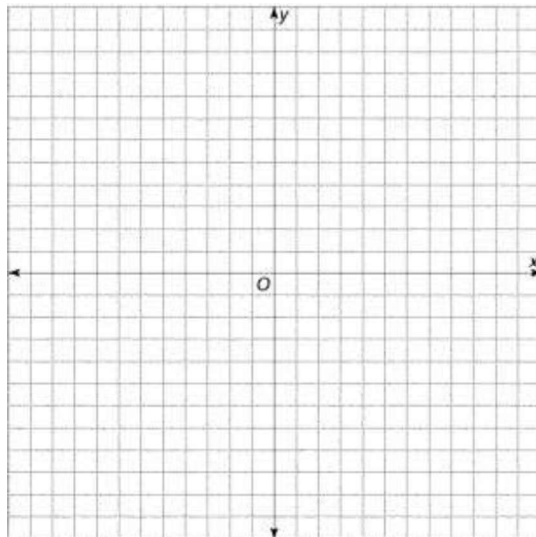
    8 cm

    4 cm

    10 cm

34.   Find the area of the triangle below.

    6

    18

    ANSWER:_____

35. Plot the following points on the grid below.   (-5,6)   (-5,-3) and (2,6).

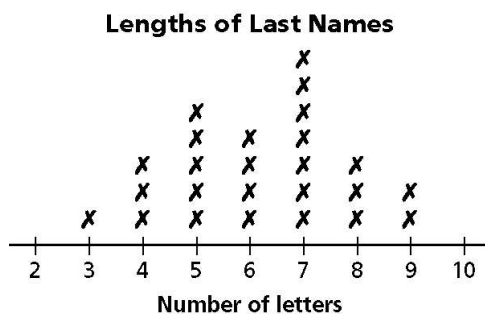- Add a fourth point to create a rectangle. Give the coordinates of the new point.

- Find the area and perimeter of the rectangle.

STATISTICS AND PROBABILITY

36. For the distribution pictured below, tell how many people are represented by the data, and identify the mode, median, and range.
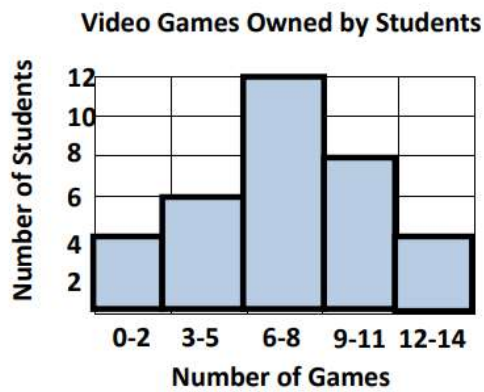
Number of people represented_____ mode_____median_____range_____

Lengths of Last Names

37. Mike was in charge of collecting contributions for the Food Bank. He received contributions of $13, $34, $26, $31 and $28 from five co-workers. Find the median value of these contributions.

ANSWER:_____

38.   Use the histogram below to answer the following questions:

Video Games Owned by Students

a.   How many students own 12-14 video games?

b.   **Most** students own approximately how many video games?

39.   Thirteen bowlers were asked what their score was on their last game. The scores are shown below.

190, 154, 150, 194, 182, 170, 190, 151, 190, 170, 178, 161, 180

Find the range of the bowlers' scores.

ANSWER:_____

40.   The following data shows the high temperatures for a week in May in Michigan. Write the 5-number summary (minimum, first quartile, median, third quartile, and maximum) and then represent the data with a **boxplot**.

Day	Temp
Sun	66° F
Mon	67° F
Tue	71° F
Wed	68° F
Thurs	62° F
Fri	59° F
Sat	62° F

Minimum =   1st Quartile =   Median =   3rd Quartile =   Maximum=