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EPCS

65 W. Demarest Avenue

Englewood, NJ 07631

2023-24 7th Grade Preparation Packet

Welcome to 7th Grade Mathematics! Our 7th Grade Mathematics Course is a comprehensive course that will provide you with the fundamental tools of mathematical understanding that will support you in future math courses. Since you will be taking 7th Grade Mathematics after successful completion of 6th Grade Mathematics, this 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, the packet provides a review of the major 6th grade topics as well as a preview of the 7th grade topics.

Here are some websites you might find particularly useful:

- iReady.com
- <http://www.khanacademy.org/>
- www.ixl.com/math/
- www.brainpop.com
- www.geogebra.org
- www.math-aids.com
- www.jeopardylabs.com
- www.kutasoftware.com

This collection of problems will identify those concepts 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 without the use of a calculator and show all work.*****

You will be responsible for handing in the completed packet with all work shown on the first day of school. 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 you to include this packet in your summer festivities! Good luck and enjoy!

Name: _____ Parent Signature: _____

7th Grade Preparation Packet Score: _____/50

RATIOS AND PROPORTIONAL REASONING

1. You drive a distance of 242 miles and use 11 gallons of gas. What is the average miles per gallon of your car?

ANSWER:_____

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

ANSWER:_____

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

ANSWER:_____

4. 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:_____

5. 17 out of 20 adults surveyed said they owned a cell phone. Represent the ratio 17 out of 20 as a percent.

ANSWER:_____

6. At a light bulb factory, 3 out of every 1,000 bulbs produced are defective. If 5,000 bulbs are produced, how many would you expect to be defective?

ANSWER:_____

TOTAL SCORE: _____ of 6

7. Decide whether the pair of ratios form a proportion

$$\frac{15}{12} \stackrel{?}{=} \frac{4.5}{3.6}$$

ANSWER:_____

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

ANSWER:_____

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

ANSWER:_____

10. Complete the ratio table below and then write the three new equivalent ratios.

72	36	24	12
126			

ANSWER:_____

11. Write 9% as a ratio.

ANSWER:_____

12. A fruit bowl contains 3 apples, 2 bananas, and 5 pears. What is the ratio of pears to apples?

ANSWER:_____

TOTAL SCORE: _____ of 6

THE NUMBER SYSTEM

13. 4 students equally share $\frac{3}{4}$ of a pizza. How much of the pizza does each student get?

ANSWER:_____

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

ANSWER:_____

15. There was $\frac{2}{3}$ of a pan of lasagna in the refrigerator. Bill and his friends ate half of what was left. Write a number sentence and draw a model to represent the problem. How much of the pan did they eat?

ANSWER:_____

16. 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:_____

17. 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:_____

TOTAL SCORE: _____ of 5

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

18. $37.65 - 4.238$

ANSWER:_____

19. $297.57 \div 6.5$

ANSWER:_____

20. $74,404 \div 356$

ANSWER:_____

21. $417 + 37.95$

ANSWER:_____

22. 12.08×35.2

ANSWER:_____

23. Complete the table.

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

TOTAL SCORE: _____ of 6

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

24. $2\frac{1}{2} - \frac{7}{8} =$

ANSWER: _____

25. $4\frac{3}{6} \times \frac{1}{9} =$

ANSWER: _____

26. $5 \div \frac{3}{10} =$

ANSWER: _____

27. $\frac{5}{6} \div 12 =$

ANSWER: _____

28. What is $\frac{2}{3}$ of 120?

ANSWER: _____

TOTAL SCORE: _____ of 5

EXPRESSIONS AND EQUATIONS

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

ANSWER:_____

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

ANSWER:_____

31. Solve $x - 10 = 23$

ANSWER:_____

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

ANSWER:_____

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

ANSWER:_____

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

ANSWER:_____

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

ANSWER:_____

36. Use the distributive property to solve the equation. $3x = 15$

ANSWER:_____

37. Jack has \$25 to spend at the mall. Write an inequality that expresses symbolically the amount of money, m , that Jack can spend.

ANSWER:_____

TOTAL SCORE: _____ of 9

38. *Princess Maria's* carriage travels at 4 miles per hour. Write an equation to find out how many hours a 48 mile trip will take at that rate. Solve the equation.

ANSWER: _____

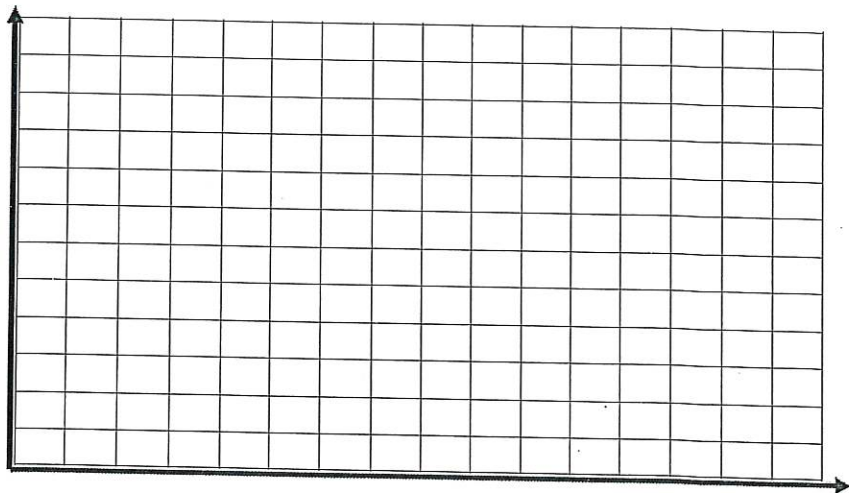
39. Find the width of a rectangle with a length of 18cm and an area of 72cm^2 .

ANSWER: _____

40. 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.
- Graph the data on the grid. Remember to select a scale and label the graph.
- Write a rule relating miles walked to money collected.

Miles	Money



TOTAL SCORE: _____ of 3

GEOMETRY

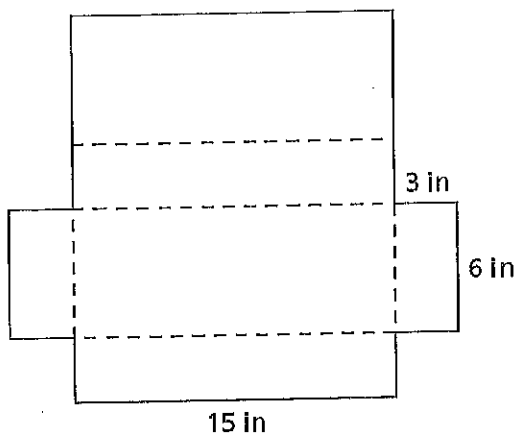
41. This net can be folded on the dashed lines to make a box.

a. What is the surface area of the box?

ANSWER (a): _____

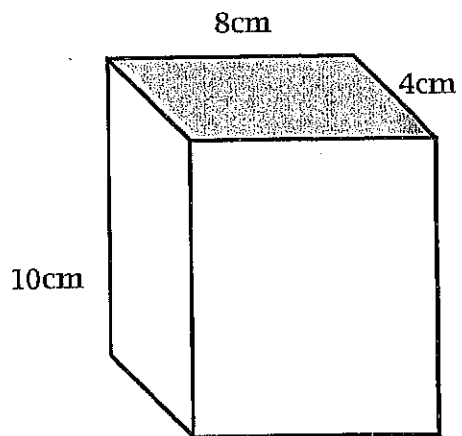
b. What is the volume of the box?

ANSWER (b): _____



42. Name the figure at the right below. _____

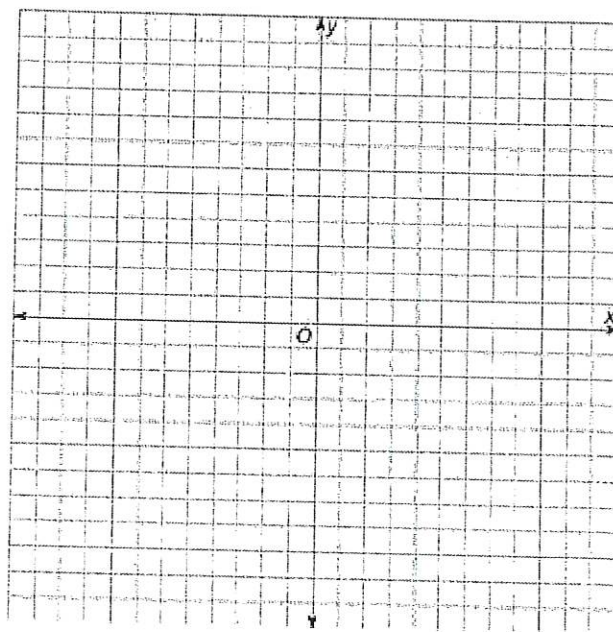
- Find the volume of the figure.
- Sketch the net for the figure.
- Use the net to find the surface area of the figure.



TOTAL SCORE: _____ of 2

43. 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



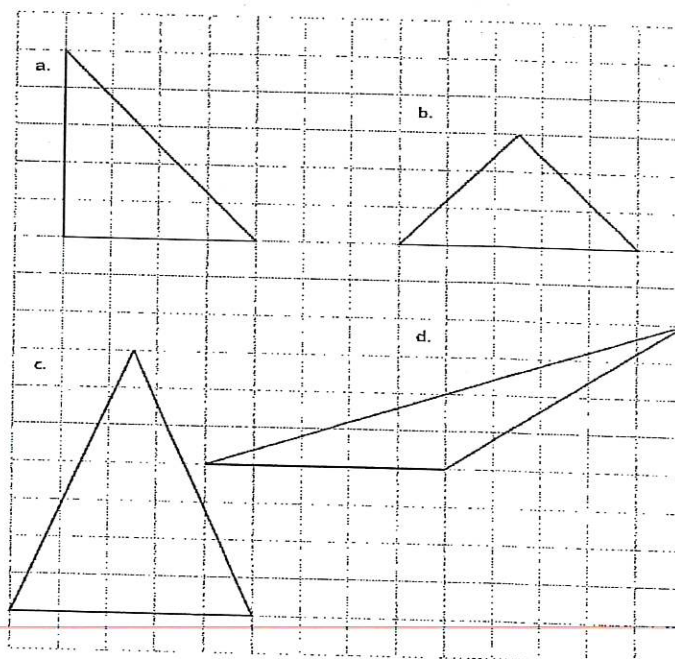
44. Find the area of each triangle below. Classify the triangle by its angles (acute, obtuse, or right).

A. _____

B. _____

C. _____

D. _____

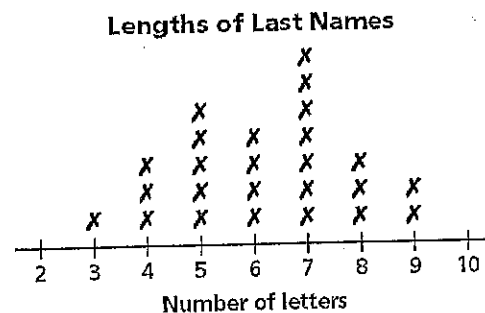


TOTAL SCORE: _____ of 3

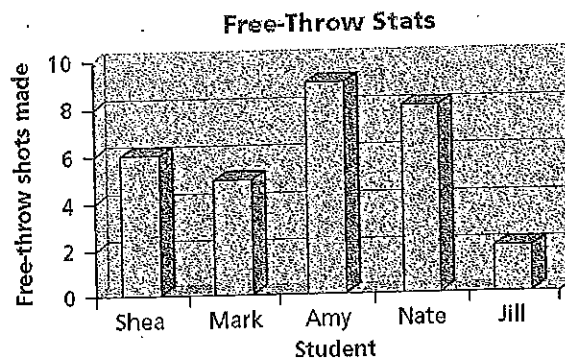
STATISTICS AND PROBABILITY

45. 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 _____



46. Five students competed in a free throw contest. The number of free-throws out of 10 each student made is charted below. Based on the chart below, which of the following statements is false?



- Amy made more free throws than Shea or Jill
- Mark made more free throws than Jill
- Nate made the most free throws
- Shea made less free throws than Nate and Amy

TOTAL SCORE: _____ of 2

47. 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:_____

48. 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:_____

49. 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 =

TOTAL SCORE: _____ of 3

6th Grade Final Exam

Number Sense

1) Turn $\frac{7}{13}$ into a decimal (round to thousandth if necessary)

2) Turn 25.7% into a decimal

3) What is 35% of 45?

4) $7 - 6 \div 2 \times 3 + 7 - (9 - 4^2)$

5) What percent is 75 of 250?

6) $\frac{15}{21} \div \frac{25}{14}$

7) Turn 25281 into a percent

8) Expand 12^7

9) $283 \div 13$ (round to the nearest thousandths)

10) Lightskin Savior is going to buy tickets to the Lil Nas x concert for him and his friend White Monk. He pays \$450.00 in total for both tickets. He uses a 20% off coupon. After the discount, there was a 6% tax and a \$25.00 parking ticket for the concert. The day of the concert, they buy \$15.00 worth of fried chicken. If they split it in half how much did Lightskin Savior and White Monk pay each in total for the concert?

Ratios and Proportions

11) What is the unit rate of a car that travels 312 miles with 11 gallons of gas? (round to hundredth place if needed)

12) 8 triangles, 9 squares, 13 rectangles, 21 trapezoids, and 17 kites
What is the ratio of Triangles to the rest?

$$13) \frac{36}{48} = \frac{75}{x}$$

$$14) \frac{18}{x} = \frac{12}{15}$$

15) Sanai bought a boxes of Pocky Sticks. The ratio of the flavor of Pocky sticks was 32 strawberry to 20 chocolates. If she divided it up based on the ratio and she had 15 chocolate Pocky's, how much strawberry did she have?

16) 10 blue marbles, 20 red marbles, 8 yellow marbles, and 12 green marbles
What is the ratio of yellow marbles to green and blue?

17) Dylan saw a pack of 48 pigeons and 30 doves about to fight. He then thought, the ratio of doves to pigeons is 15 to 24. He thought the doves stood no chance. Was his ratio correct? Why or why not?

18) 8 Pennies, 10 nickels, 21 dimes, and 19 quarters
What is the ratio of nickels to the total?

19) What are the two different ways of solving for a variable in a proportion?

20) $\frac{2.25}{x} = \frac{2.5}{3.2}$

Algebra

$$21) 8x-3y+6+6x+3y-15$$

$$22) 12x-6=-54$$

$$23) \frac{3}{14}x + \frac{2}{7} = \frac{11}{21}$$

$$24) \frac{x}{9} = 36$$

$$25) 0.25x - 0.05 = 1$$

$$26) 4x-9 = 27$$

$$27) 8x-9-4x+3-6+9x$$

38) 13, 20, 27, 36, 13, 38, -20, 88, 76, 91, 88, 20 (mode)

39) 65, 80, 70, 50, 40, 25, 15, 18, 96, 99 (Q_1)

40) 55, 61, 22, 46, 18, 38, 79, 81, 93, 17 (mad)

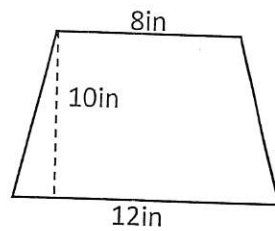
Geometry

41) The area of a rectangle is 156ft^2 . What is the measurement of the width if the length is 4yds ?

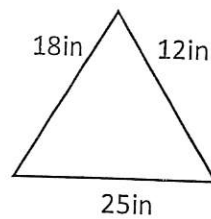
42) The area of a triangle is 48cm^2 , if the base is 12cm, what is the height?

43) The perimeter of a square is 56in. What is the area?

44) Area

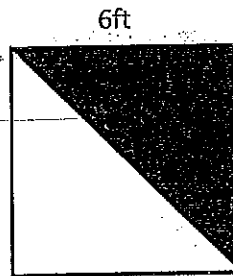


45) What is the perimeter?



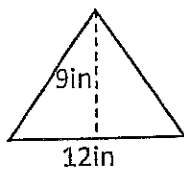
46) A rectangle has a width of 4in and a length of 2in what is the perimeter?

47) Find the area of the shaded region of the square?



48) Kamryn found a box that was 13 in width and 8in length. She told Sebastian that the area of the box was 104in. Is she right? If so show your work. If not why not?

49) Area



50) Area

