Incoming 6th Grade
Math Packet
Summer 2024

Dear Parents:

As the summer draws near, we extend to you and your child our best wishes for a relaxing and enjoyable vacation. We hope that as you plan your time together, you also look forward to working with your child to review the math skills they have learned throughout this past school year. We believe that completing the summer math packet is a great tool to help ensure your child's math skills and knowledge are maintained throughout the summer enhancing their success in Mathematics in the upcoming school year.

As mathematics is a cumulative discipline with each level building upon previously learned concepts, our students are faced with increased rigor and a higher level of complexity. Our goal steers students towards independent mathematical thought. With this thought in mind, your child's teachers have developed summer math packets that address key concepts from the previous grade. These packets provide students with extra practice on needed skills to help maintain mastery, so they are fully prepared for the next year's Math class.

All students entering grades 6-8 are expected to complete the assigned summer math packet as a way to help keep your child's math skills sharp. For optimal results, it is highly recommended that they complete a portion of the packet each week. This will ensure that skills are being reinforced weekly and that the students do not become overwhelmed.

When your child returns inAugust, the summer math packet will be collected by your child's teacher by the end of the first full week of school**.** Your student's math teacher will then spend a few days in the first week of school reviewing the concepts covered within the summer math packet.

Students will receive a hard copy of the packet from their current teacher and electronic copies are available on the school website (https://www.dentonmagnet.com/).

We are hopeful that with your assistance, your child will experience a smooth transition in the upcoming school year and we can achieve our goal of reinforcing, maintaining, and extending skills acquired during this past school year.

Sincerely,

Denton Magnet Math Teachers

Summer Math Packet

Denton Magnet School of Technology

Grade 5 into 6

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- This packet is designed to help you retain the information you learned this year in 5th grade.
- If you lose your packet, you can download a new copy from our website.

Have a great

NO Calculator!
Show work for every problem on separate sheet of paper!

Directions: Read each question carefully. Be sure to work the problem and show your work.

1. A bus line has 64 buses in its fleet. Each of the buses can seat 85 passengers. How many passengers can the fleet of buses seat at one time?

2. Guy is reading a science fiction book that is 558 pages long. If he reads 28 pages each day, how many days will it take him to read the book?

3. Find the value of *g* in the equation below.

$$0.9\ x\ 0.5 = g$$

4. Find the sum of the expression below.

$$3\frac{4}{6} + 6\frac{6}{8}$$

5. Solve the expression below.

$$2 \div \frac{1}{6}$$

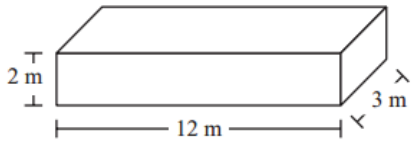
6. Solve.

$$\frac{7}{8}\ x\ 2$$

7. What is 7.951 rounded to the nearest tenth?

8. Write 8.03 in expanded form correctly.

9. A box in the shape of a rectangular prism has the dimensions shown below.



What is the volume of the box?

(a) 36 cubic meters (b) 60 cubic meters (c) 72 cubic meters (d) 84 cubic meters

10. Which of the following inequalities is true?

(a) $0.37 < 0.3$ (b) $0.3 > 0.298$ (c) $0.298 < 0.2$ (d) $0.2 > 0.37$

11. Which of the following statements about quadrilaterals is not true?

(a) Every square is also a rectangle.
(b) Every trapezoid is also a rectangle.
(c) Every rhombus is also a parallelogram.
(d) Every rectangle is also a parallelogram.

12. A scale rounds the weights of objects to the nearest tenth of a pound. What is 53.864 pounds rounded to the nearest tenth of a pound?

(a) 53.8 pounds (b) 53.9 pounds (c) 53.86 pounds (d) 53.87 pounds

13. Ms. Montano asked her students to solve the equation shown in the box below.

$$\frac{2}{7} + \frac{2}{3}$$

(a) 1 (b) $\frac{4}{10}$ (c) $\frac{20}{21}$ (d) $\frac{4}{7}$

14. The ordered pair (4, 7) gives the location of a point on the coordinate plane. What is the first step to take in locating the point?

(a) Starting at the origin, move 4 units to the right.
(b) Starting at the origin, move 4 units to the left.
(c) Starting at the origin, move 4 units up.
(d) Starting at the origin, move 4 units down.

15. Which of the following expressions has a product that contains 6 zeros?

(a) 6×10^4 (b) 8.3×10^5 (c) 2.4×10^6 (d) 41×10^6

16. The floor of Juan's storage unit is in the shape of a rectangle with a length of 10 feet and a width of 8 feet. The height of the storage unit is 9 feet. What is the volume of the storage unit?

(a) 242 ft^3 (b) 360 ft^3 (c) 484 ft^3 (d) 720 ft^3

17. A group of 4 friends are sharing a package of 7 chocolate bars. If the package is divided equally among the friends, how much chocolate should each friend get?

(a) $7\frac{1}{4}\ bars$ (b) $4\frac{1}{3} bars$ (c) $3\frac{1}{2} bars$ (d) $1\frac{3}{4} bars$

18. Which of the following is equivalent to 4.063?

(a) 4 + 0.6 + 0.3 (b) 4 + 0.6 0.03 (c) 4 + 0.06 + 0.03 (d) 4 + 0.06 + 0.003

19. Which of the following equations is true?

(a) $10^3 = 3 \times 10$ (b) $10^3 = 3 \times 10 + 10$ (c) $10^3 = 10 \times 10 \times 10$ (d) $10^3 = 10 + 10 + 10$

20. Carlos cuts ½ yard of ribbon into 3 equal pieces. What is the length of each piece of ribbon?

(a) $\frac{1}{6} yard$ (b) $\frac{1}{3} yard$ (c) $\frac{3}{2} yards$ (d) $3\ yards$

21. Which of the following statements is true about every isosceles right triangle?

(a) It has three acute angles.
(b) It has no obtuse angles.
(c) It has three equal sides.
(d) It has no equal sides.

22. What is 26.387 rounded to the nearest tenth?

(a) 30.0 (b) 26.4 (c) 26.39 (d) 26.30

23. What is the value of the expression below when p = 10?

$$(20 + 30) \div p$$

(a) 2 (b) 5 (c) 23 (d) 60

24. Eva has 2 liters of juice and some glasses. She will pour ¼ liter of juice into each glass. What is the total number of glasses Eva can fill with the juice?

(a) 6 (b) 7 (c) 8 (d) 9

25. Tess evaluated an expression by subtracting 6 from 15 and then multiplying the result by 4. Which of the following could be the expression Tess evaluated?

(a) (4 x 6) – 15 (b) 4 x (15 – 6) (c) (6 + 15) x 4 (d) 6 x (15 – 4)

26. Which of the following types of quadrilaterals always has perpendicular sides?

(a) Rhombus (b) Rectangle (c) Trapezoid (d) Paralellogram

27. What digit is in the hundredths place of 1.258?

(a) 1 (b) 2 (c) 5 (d) 8

28. A science museum has a fish tank in the shape of a rectangular prism.

- It has a length of 8 feet.
- It has a width of 3 feet.
- It has a height of 4 feet.

What is the volume of the fish tank?

(a) 15 ft^3 (b) 30 ft^3 (c) 96 ft^3 (d) 136 ft^3

29. What is the value of the expression below?

$$6 - (1\ x\ 4) - \ 2$$

(a) 0 (b) 4 (c) 10 (d) 18

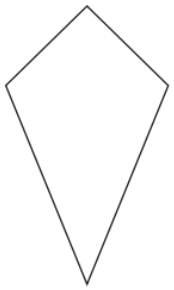
30. Which statement about quadrilaterals is true?

(a) Every rectangle is also a parallelogram.
(b) Every parallelogram is also a rectangle.
(c) Every rectangle is also a rhombus.
(d) Every rhombus is also a rectangle.

31. The floor of Lucy's classroom is in the shape of a rectangle. It is 20 yards long and its area is 180 square yards. What is the width of Lucy's classroom?

(a) 9 yards (b) 18 yards (c) 50 yards (d) 70 yards

32. Javier drew the quadrilateral shown below.



How many lines of symmetry does Javier's quadrilateral appear to have?

(a) 0 (b) 1 (c) 2 (d) 4

33. Ginny sells popcorn at basketball games. The expression below represents the total amount of money Ginny will have if she sells p bags of popcorn.

$$(2.50 \times p) + 5.00$$

What is the total amount of money Ginny will have if she sells 20 bags of popcorn?

(a) $7.50 (b) $27.50 (c) $55.00 (d) $62.50

34. A pyramid has five faces. Four of the faces are congruent equilateral triangles. What is the shape of the fifth face?

(a) a square (b) a right triangle (c) an equilateral triangle (d) a rectangle

35. An earthworm has a length of 12.8 centimeters. What is the length, in millimeters, of the earthworm?

(a) 0.128 millimeters (b) 1.28 millimeters (c) 128 millimeters (d) 1280 millimeters

36. Pat bought one of each of the items in the table below.

Items Pat Bought

Item	Cost
Blender	$34.88
Coffeemaker	$29.95
Can Opener	$14.29
Rice Cooker	$30.25

Which of the following sums is closest to the total cost, in dollars, of the four items that Pat bought?

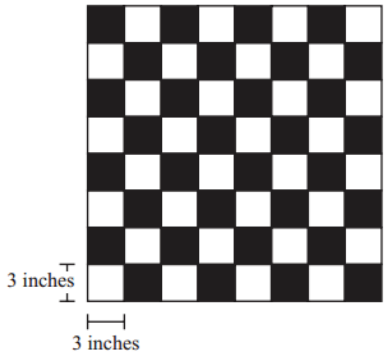
(a) 35 + 30 + 14 + 30 (b) 34 + 29 + 14 + 30 (c) 35 + 30 + 15 + 31 (d) 30 + 30 + 10 + 30

37. Which of the following is equivalent to the expression below?

$$\frac{2}{5}+\frac{1}{4}$$

(a) $\frac{2}{20}$ (b) $\frac{3}{20}$ (c) $\frac{9}{20}$ (d) $\frac{13}{20}$

38. Edgar used congruent squares to make a checkerboard, as shown below.



The sides of each square have a length of 3 inches. What is the perimeter of Edgar's checkerboard?

(a) 72 inches (b) 96 inches (c) 288 inches (d) 576 inches

39. Felicia drew a polygon.

- Each side of her polygon has the same length.
- There are no parallel sides in her polygon.

Which of the following could be the polygon Felicia drew?

(a) Equilateral triangle (b) Right triangle (c) Trapezoid (d) Rhombus

40. In Edward's class, $\frac{18}{24}$ of the students like swimming better than they like running. What is $\frac{18}{24}$ in simplest form?

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{6}{8}$ (d) $\frac{9}{12}$

41. It was reported that 6,437,193 people were living in Massachusetts in 2006. What is the value of 4 in 6,437,193?

(a) Four million (b) Forty thousand (c) Four hundred million (d) Four hundred thousand

42. Ari wrote the pattern below.

2, 14, 98, 686 . . .

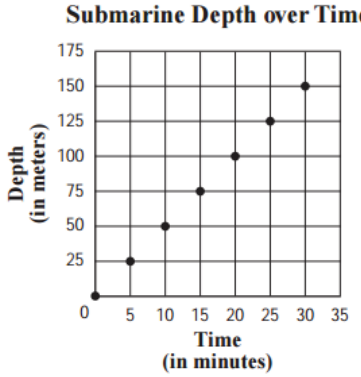
Which of the following could be the rule for Ari's pattern?

(a) Add 14 (b) Add 12 (c) Multiply by 14 (d) Multiply by 7

43. Yuan needs $2\frac{3}{4}$ cups of milk for a recipe. Which of the following is another way to write $2\frac{3}{4}$?

(a) $\frac{9}{4}$ (b) $\frac{11}{4}$ (c) $\frac{18}{4}$ (d) $\frac{23}{4}$

44. The graph below represents the depth, in meters, that a submarine dove over time.



The submarine started diving at 6:00 a.m. Based on the graph, what time did the submarine reach a depth of 100 meters?

(a) 6:00 am (b) 6:20 am (c) 6:50am (d) 8:00am

45. Matthew wants to put 75 photos in a photo album. A full page can hold 6 photos. What is the total number of photos that Matthew will have left over after he fills all of the pages that he can with 6 photos on each page?

(a) 3 (b) 5 (c) 6 (d) 12

46. Which of the following numbers is a common multiple of 6 and 8?

(a) 12 (b) 16 (c) 24 (d) 30

47. Rafael can make 30 jars of applesauce from 2 bushels of apples. What is the total number of jars of applesauce that Rafael can make from 5 bushels of apples?

48. Which expression is equal to $\frac{7}{8}$?

(a) 8 – 7 (b) 7 x 8 (c) $\frac{8}{7}$ (d) $7 \div 8$

49. Which explanation about figures is correct?

(a) All rhombuses are parallelograms. Parallelograms have 2 pairs of parallel sides. Therefore, all rhombuses have 2 pairs of parallel sides.
(b) All rhombuses are parallelograms. Parallelograms have exactly 1 pair of parallel sides. Therefore, all rhombuses have exactly 1 pair of parallel sides.
(c) Only some rhombuses are parallelograms. Parallelograms have 2 pairs of parallel sides. Therefore, only some rhombuses have 2 pairs of parallel sides.
(d) Only some rhombuses are parallelograms. Parallelograms have exactly 1 pair of parallel sides. Therefore, only some rhombuses have exactly 1 pair of parallel sides.

50. Isabel lives $\frac{3}{4}$ mile from school. Janet lives $\frac{2}{3}$ mile from school. How much farther, in miles, does Isabel live from school than Janet?

(a) $\frac{1}{4} mile$ (b) $\frac{1}{3} mile$ (c) $\frac{1}{7} mile$ (d) $\frac{1}{12} mile$

Directions: In this next section, you will answer 20 short answer questions. Be sure to read directions *carefully* and show your work.

51. Spencer wants to put his 2,188 stamps in a binder. Each page in the binder holds 24 stamps. How many stamps will be on the last page in the binder?

52. Maya is mailing 3 gifts to her granddaughter for her birthday. The weights of the gifts were 4.5 pounds, 2.75 pounds, and 0.68 pounds. What is the total weight of the gifts?

53. Rick has 35 oranges. He divides them equally into 7 bags. What fraction represents the number of oranges Rick puts in each bag?

54. Dana had 2 feet of ribbon. She cut the ribbon into 5 equal pieces to make large bows. How long is each piece of ribbon?

55. How many ¼ mile segments are in a 3 mile relay?

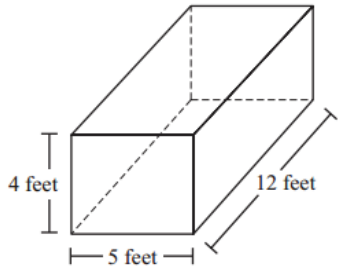
56. It snowed 37 ¾ inches of snow last year, which is 2 times more snow than average. What is the average snowfall?

57. Draw a number line to show the integers between -10 and 10.

58. The value of the 7 in 27,459 is how many times the value of the 7 in 40,735?

59. Judy spent $\frac{1}{2}$ of her savings on a bicycle and $\frac{2}{5}$ of her savings on a helmet. What is the total fraction of her savings that Judy spent on a bicycle and a helmet?

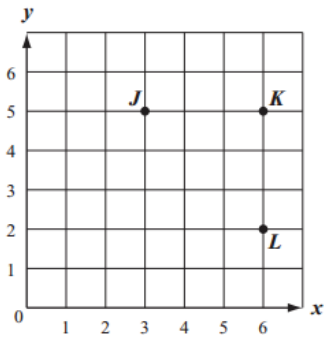
60. The dimensions of a rectangular prism are shown below.



What is the volume, in cubic feet, of the rectangular prism?

61. Fritz did 875 sit-ups in 7 days. He did the same number of sit-ups each day. What is the total number of sit-ups Fritz did each day?

62. Tiesha plotted points J, K, and L on a coordinate grid, as shown below.



Tiesha wants to plot point M so that points J, K, L, and M form the vertices of a square. What ordered pair represents the best location for Tiesha to plot point M?

63. One megaton is equivalent to 1,000,000 tons. What is 1,000,000 written as a power of ten?

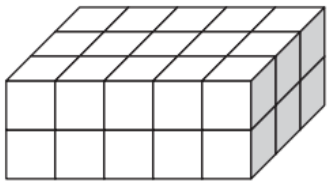
64. Write a mixed number that is greater than $\frac{12}{4}$ and less than $\frac{15}{4}$.

65. Walter made a pyramid with a base that was a square. What was the total number of edges in Walter's pyramid?

66. What is the value of the expression below?

$$3\ x\ (8 + 16) \div 4$$

67. The rectangular prism shown is made from cubes. Each cube is 1 cubic unit.



What is the volume, in cubic units, of the rectangular prism?

68. What is the product of 463 and 1,945?

69. Solve the expression below.

$$\frac{3}{4} + \frac{4}{5} - \frac{7}{10}$$

70. What is the sum of 5.63 and 14.37?

Directions: In this next section, you will answer 3 open response questions. Be sure to read directions *carefully* and to answer each question completely. <u>Show your work and circle your answer.</u>

71. Carolina is twice as old as her brother Diego will be in 3 years. Diego is 4 years old now. The expression below shows how to find Carolina's age, in years.

$$2 \times (4 + 3)$$

(a) What is Carolina's age, in years? Show or explain how you got your answer.

Carolina's sister, Marisol, is three times as old as Diego was 2 years ago.

(b) Write an expression using numbers and operations to represent Marisol's age, in years.

(c) What is Marisol's age, in years? Show or explain how you got your answer.

The expression below represents the difference, in years, between the ages of Carolina's father and her mother.

$$(15 \times 3) - [(10 \times 4) - 2]$$

(d) What is the difference, in years, between the ages of Carolina's father and her mother? Show or explain how you got your answer.

72. A class of 25 students is going on a field trip. The bus for the field trip will cost a total of $125. Each student will pay the same amount for the bus.

(a) What is the cost of the bus for each student? Show your work or explain how you got your answer.

On the field trip, students can purchase a lunch for $2.75, a bottle of water for $0.69, a snack for $1.25, and a T-shirt for $12.50.

(b) What is the total cost of one lunch, one bottle of water, one snack, and one T-shirt? Show your work or explain how you got your answer.

Harold is going on the field trip. He wants to buy a snack and a T-shirt. Harold has a total of $13.10.

(c) Does Harold have enough money to buy the snack and the T-shirt? Show your work or explain how you got your answer.

73. Brenda is making tree costumes for a play. The list below shows the amounts of the different colors of cloth Brenda will use to make one tree costume.

- $3\frac{5}{8}\ yards\ brown\ cloth$
- $2\frac{1}{2} yards\ orange\ cloth$
- $\frac{2}{3} yards\ yellow\ cloth$

(a) What is the difference, in yards, between the amount of orange cloth and the amount of brown cloth that Brenda will use to make one tree costume? Show or explain how you got your answer.

Brenda plans to use brown cloth for the trunk and branches of the tree, and orange and yellow cloth for the leaves.

(b) . What is the total amount of cloth, in yards, Brenda will use to make the leaves of one tree costume? Show or explain how you got your answer.

Brenda wants to make two tree costumes.

(c) What is the total amount of cloth, in yards, Brenda will use to make two tree costumes? Show or explain how you got your answer.

Directions: In this last section, you will answer one problem. Be sure to read the problem *carefully* and to answer the question completely. <u>Show your work and circle your answer.</u> Use any method to solve this problem.

74. There was a war on the planet Grumble. It lasted 1,000 days. If the planet Grumble uses the same calendar that we use on Earth, and the 1,000-day war started on a Monday, what day of the week did the 1,000-day war end?