Incoming 7th Grade
Math Packet
Summer 2022

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 6 into 7

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- This packet is designed to help you retain the information you learned this year in 6th grade.
- The packet is due Wednesday, August 10, 2022.
- 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: In this first section, you will answer 50 multiple choice questions. Be sure to consider all answers and to read directions *carefully*.

1. You are making identical bagel platters using 40 plain bagels, 30 raisin bagels, and 24 blueberry bagels. What is the greatest number of platters that you can make if there are no leftover bagels?

(a) 2 (b) 8 (c) 6 (d) 10

2. Which number is equivalent to the expression 148 x 27?

(a) 3696 (b) 3946 (c) 3896 (d) 3996

3. Which number pair has a least common multiple of 48?

(a) 4, 12 (b) 6, 8 (c) 8, 24 (d) 16, 24

4. Which expression is *not* equivalent to $\frac{2}{3}$?

(a) $\frac{1}{4}+\frac{1}{3}\div\frac{4}{5}$ (b) $\frac{5}{6}-\frac{1}{8}\div\frac{1}{2}$ (c) $\frac{13}{30}+\frac{1}{5}\div\frac{6}{7}$ (d) $\frac{13}{18}-\frac{1}{26}\div\frac{9}{13}$

5. Which number is equivalent to 5.139 – 2.64?

(a) 2.499 (b) 3.519 (c) 2.599 (d) 3.599

6. What is the value of 9.6 x 12.643?

(a) 12.13728 (b) 121.3728 (c) 1213.728 (d) 12,137.28

7. Which number pair has a greatest common factor of 6?

(a) 18, 54 (b) 30, 60 (c) 30, 42 (d) 36, 60

8. What is the value of the expression below when a = 5, b = 7, and c = 6?

$$9b - 4a + 2c$$

(a) 29 (b) 55 (c) 31 (d) 78

9. You evaluated an expression using x = 6 and y = 9. You correctly got an answer of 105. Which expression did you evaluate?

(a) 3x + 6y (b) 6x + 9y (c) 5x + 10y (d) 10x + 5y

10. You have three times as many guitar picks as your cousin. Let *v* be the number of guitar picks that your cousin has. Which expression represents the number of guitar picks you have?

(a) 3*v* (b) 3 – *v* (c) *v* + 3 (d) $\frac{v}{3}$

11. Which fraction is *not* equivalent to 25%?

(a) $\frac{1}{4}$ (b) $\frac{2}{5}$ (c) $\frac{5}{20}$ (d) $\frac{25}{100}$

12. Which expression is equivalent to the expression below?

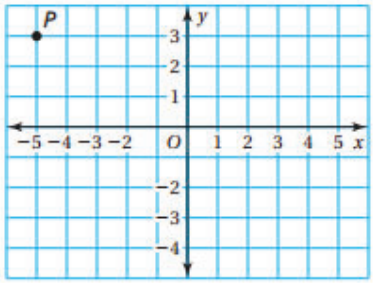
$$2(m + n)$$

(a) $2m\ x\ 2n$ (b) $(2 + m)x(2 + n)$ (c) $2m + 2n$ (d) $(2 + m) + (2 + n)$

13. If 5 dogs share equally a bag of dog treats, each dog gets 24 treats. Suppose 8 dogs share equally the bag of treats. How many treats does each dog get?

(a) 3 (b) 15 (c) 21 (d) 38

14. Point *P* is plotted in the coordinate plane below.



(a) (-5, -3) (b) (-3, -5) (c) (-5, 3) (d) (3, -5)

15. What percent is equivalent to $\frac{4}{5}$?

(a) 20% (b) 80% (c) 45% (d) 125%

16. On Saturday, you earned $35 mowing lawns. This was *x* dollars more than you earned on Thursday. Which expression represents the amount, in dollars, you earned mowing lawns on Thursday?

(a) 35x (b) x – 35 (c) x + 35 (d) 35 – x

17. In a fish tank, 75% of the fish are goldfish. How many fish are in the tank if there are 24 goldfish?

(a) 6 (b) 18 (c) 32 (d) 96

18. What is the first step in evaluating the expression below?

$$3 \cdot (5 + 2)^2 \div 7$$

(a) Multiply 3 and 5
(b) Evaluate 5^2
(c) Add 5 and 2
(d) Evaluate 2^2

19. The temperature in a town has never been above 38 degrees Fahrenheit. Let *t* represent the temperature, in degrees Fahrenheit. Which inequality represents the temperature in the town?

(a) $t < 38$ (b) $t > 38$ (c) $t \leq 38$ (d) $t \geq 38$

20. What is the value of the expression below when a = 6 and b = 14?

$$0.8a + 0.02b$$

(a) 0.4828 (b) 5.08 (c) 0.8814 (d) 16.4

21. What is 25% of 400?

(a) 16 (b) 1,000 (c) 100 (d) 10, 000

22. A student took 5 tests this marking period and had a mean score of 92. Her scores on the first 4 tests were 90, 96, 86, and 92. What was her score on the fifth test?

(a) 92 (b) 93 (c) 96 (d) 98

23. You are comparing the costs of buying bottles of water at the supermarket. Which of the following has the least cost per liter?

(a) Six 1-liter bottles for $1.80
(b) One 2-liter bottle for $0.50
(c) Eight $\frac{1}{2}$ liter bottles for $1.50
(d) twelve $\frac{1}{2}$ liter bottles for $1.98

24. Justin divided 403 by a number and got a quotient of 26 with a remainder of 13. What was the number Justin divided by?

(a) 13 (b) 14 (c) 15 (d) 16

25. Madison finished $\frac{4}{5}$ of her homework before dinner. What percent of Madison's homework is left to finish?

(a) 15% (b) 20% (c) 45% (d) 80%

26. Sean's height is 1.8 meters. What is Sean's height in centimeters?

(a) 0.018 centimeters (b) 0.18 centimeters (c) 18 centimeters (d) 180 centimeters

27. A disk in the shape of a circle has a diameter of 64 millimeters. What is the radius of the disk?

(a) 8 mm (b) 32 mm (c) 64 mm (d) 128 mm

28. Jeanie has a goal to run a total of 800 laps around her school's track this year. Her plan is to run exactly 4 laps each day. Which of the following expressions represents the total number of laps Jeanie will have left to run after d days?

(a) 800 – 4d (b) 800d – 4 (c) 4d – 800 (d) 4 – 800d

29. Which of the following mixed numbers has a value between $\frac{10}{3}$ and $\frac{11}{3}$?

(a) $3\frac{1}{2}$ (b) $3\frac{1}{4}$ (c) $3\frac{3}{4}$ (d) $3\frac{1}{8}$

30. There were 5 players in a game.

- 2 players scored 40 points each
- 2 players scored 50 points each
- 1 player scored 90 points

What was the mean number of points scored by the 5 players in the game?

(a) 36 (b) 50 (c) 54 (d) 60

31. Which of the following numbers is not a solution of the inequality below?

$$x > -5$$

(a) 0 (b) -2 (c) 5 (d) -10

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

6m + 3

(a) 2(3m + 3) (b) 3(2m + 1) (c) 3(2m + 3) (d) 6(m + 3)

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

$$3\frac{2}{3} \div \frac{2}{3}$$

(a) $5\frac{1}{2}$ (b) 4 (c) 3 (d) $2\frac{4}{9}$

34. Mario is making cookies. To make 30 cookies, his recipe requires 3 eggs. Using this recipe, what is the total number of eggs he will need to make 120 cookies?

(a) 6 (b) 9 (c) 10 (d) 12

35. At a grocery store, one pound of grapes costs $2.25. In the following expressions, p represents any number of pounds of grapes. Which expression represents the cost, in dollars, of p pounds of grapes?

(a) p – 2.25 (b) 2.25 + p (c) $p \div 2.25$ (d) 2.25 x p

36. Dylan answered 80% of the questions on a quiz correctly. If he answered 40 questions correctly, what was the total number of questions on Dylan's quiz?

(a) 32 (b) 50 (c) 60 (d) 120

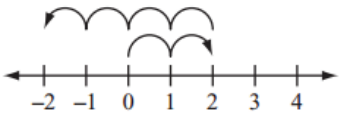
37. Alex uses 5 cups of water for every 3 cups of rice she cooks. What is the ratio of rice to water?

(a) $\frac{2}{8}$ (b) $\frac{8}{2}$ (c) $\frac{3}{5}$ (d) $\frac{5}{3}$

38. Jackson sold a total of 319 cups of lemonade in June and July. He sold 136 cups of lemonade in June. Which of the following represents the number of cups of lemonade Jackson sold in July?

(a) 183 + 319 (b) 183 – 319 (c) 319 + 136 (d) 319 – 136

39. Which of the following equations is best represented on the number line below?



(a) 2 + (-4) = -2 (b) 2 + (-2) = 0 (c) 4 + (-2) = 2 (d) 0 + (-2) = -2

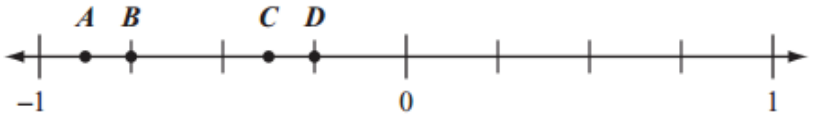
40. Vicky wrote the equation shown below in her notebook.

x - 9 = 26

In order for Vicky's equation to be true, which of the following equations must also be true?

(a) x = 9 – 26 (b) x = 9 x 26 (c) x = 26 – 9 (d) x = 26 + 9

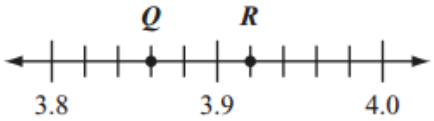
41. Points A, B, C, and D are shown on the number line below.



Which point is located at -0.75 on the number line?

(a) Point A (b) Point B (c) Point C (d) Point D

42. Points Q and R on the number line below each represent a real number.



Which of the following numbers is located between points Q and R on the number line?

(a) 3.84 (b) 3.88 (c) 3.94 (d) 3.98

43. Ariel recorded the number of e-mails she received each day for 7 days. The results are listed below.

15, 17, 17, 19, 24, 24, 24

What is the mode of the numbers of e-mails Ariel received for the 7 days?

(a) 17 (b) 19 (c) 20 (d) 24

44. Of the 75 teachers at a school, 15 teach mathematics. What percent of the teachers at the school teach mathematics?

(a) 2% (b) 5% (c) 15% (d) 20%

45. Julius has a bag with some marbles in it. The marbles are all the same size and shape.

- There are 6 red marbles.
- There are 8 white marbles.
- There are 12 blue marbles.

Julius will take a marble from the bag without looking. What is the probability that Julius will take either a red marble or a white marble?

(a) $\frac{6}{26}$ (b) $\frac{8}{18}$ (c) $\frac{14}{12}$ (d) $\frac{14}{26}$

46. A cafeteria served lunch to 287 students. Each lunch cost $2.05. Which of the following is closest to the total cost of the lunches served by the cafeteria?

(a) $500 (b) $600 (c) $675 (d) $750

47. A class of 25 students shares a class set of 100 markers. On a day with 5 students absent, which statement is true?

(a) For every 5 students, there is 1 marker. (b) For every 4 students, there is 1 marker.
(c) For each student, there are 4 markers. (d) For each student, there are 5 markers.

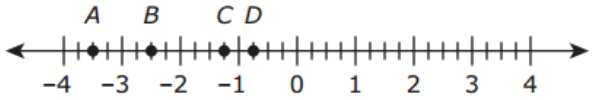
48. Which expression represents “6 more than x”?

(a) x – 6 (b) 6 · x (c) x + 6 (d) 6 – x

49. Let *x* represent any number in the set of even integers greater than 1. Which inequality is true for all values of *x*?

(a) $x < 0$ (b) $x > 0$ (c) $x < 4$ (d) $x > 4$

50. . This number line shows four points.



Which point is located at $-\frac{3}{4}$?

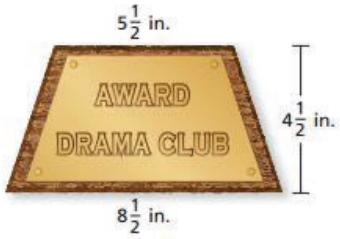
(a) Point A (b) Point B (c) Point C (d) Point D

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

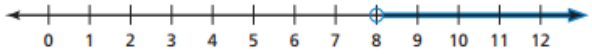
51. What is the least common multiple of 14 and 49?

52. What is the area, in square yards, of the triangle below?

53. What is the area, in square inches, of the trapezoid-shaped award?



54. An inequality is graphed on the number line below.



What is the least whole number value that is a solution of the inequality?

55. What is the value of the expression below?

$$46.8 \div 0.156$$

56. What is the value of *m* that makes the equation below true?

$$4m = 6$$

57. Find the mean, median, and mode(s) of the data. Circle the measurement that best represents the data.

46, 27, 94, 56, 53, 65, 43

58. Solve the inequality.

$$72 > 12p$$

59. Write an inequality for the situation.

An MP3 player holds up to 300 songs.

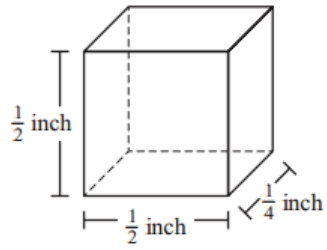
60. Mason wrote the expression shown below.

$$5(y + 2)$$

Write an expression that is equivalent to Mason's expression.

61. The temperature on Saturday was -4 degrees Fahrenheit (°F). The temperature on Sunday was 9 degrees warmer than the temperature on Saturday. What was the temperature, in degrees Fahrenheit, on Sunday?

62. A rectangular prism and its dimensions are shown below.



What is the volume, in cubic inches, of the prism?

63. Last week Colby baby-sat for 12 hours and earned $156. He earned the same amount of money for each hour he baby-sat. How much money, in dollars, did Colby earn per hour for baby-sitting?

64. A circle has a diameter of 20 centimeters. What is the area, in square centimeters, of the circle? (Use 3.14 for π.)

65. What is 5% written as a fraction in simplest form?

66. Charlotte makes $9\frac{1}{3}$ cups of snack mix. She puts all the snack mix into plastic bags. She puts $\frac{2}{3}$ cup of the snack mix in each bag. How many plastic bags does Charlotte need?

67. Thomas buys a case of bottled water. A case contains 36 bottles of water and costs $4.69. Thomas will sell each bottle of water for $0.75 at a school event. How much profit, in dollars, will Thomas earn if he sells all the bottles of water?

68. What is the sum of 74.835 and 2.67?

69. Your basketball team scored 4 fewer than twice as many points as your opponent. Write an expression for the number of points, *p*, your team scored. If the other team scored 24 points, how many points did your team score?

70. You have $\frac{3}{5}$ of an apple pie. You divide the remaining pie into 5 equal slices. What fraction of the original pie is each slice?

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. Lilly wrote the expression shown below.

$$6x - 3$$

(a) What is the coefficient of the variable in Lilly's expression?

(b) What is the value of Lilly's expression when x = 5? Show or explain how you got your answer.

Christina wrote an expression that is equivalent to the statement in the box below.

8 more than the difference of $2x$ and 1

(c) What could be the expression that Christina wrote?

(d) What is the difference of the value of Lily's expression when x = 5 and the value of Christina's expression when x = 5? Show or explain how you got your answer.

72. A dairy farmer uses two trucks to deliver milk. The two trucks use different kinds of fuel. Truck A uses gasoline and Truck B uses diesel. The table below shows the distance, in miles, that each truck can travel per gallon of fuel.

Miles Traveled per Gallon of Fuel

Gallons of Fuel	Truck A (Gasoline)	Truck B (Diesel)
1	8 miles	12 miles
2	16 miles	24 miles
3	24 miles	36 miles
4	? miles	48 miles
5	40 miles	60 miles

(a) Based on the table, what is the total number of miles Truck A can travel using 4 gallons of gasoline? Show or explain how you got your answer.

(b) Based on the table, what is the total number of gallons of diesel Truck B will use to travel 132 miles? Show or explain how you got your answer.

(c) Gasoline costs $4 per gallon and diesel costs $5 per gallon. Which truck will have a lower fuel cost for a 24-mile trip? Show or explain how you got your answer.

73. Phil, Richie, and Charlie each spent exactly $9.00 at the same snack bar.

- Phil bought 3 bags of peanuts.
- Richie bought 2 bags of peanuts and 2 pretzels.
- Charlie bought 1 bag of peanuts, 1 pretzel, and 1 milk shake.

(a) What is the cost, in dollars, of 1 bag of peanuts? Show or explain how you got your answer.

(b) What is the cost, in dollars, of 1 pretzel? Show or explain how you got your answer.

(c) What is the total number of pretzels that can be bought for the cost of 1 milk shake? 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. Bobby has 4 tickets for the Mariners game. He invites 3 friends – Tommy, Larry, and Sam – to go with him. Bobby has the first 2 seats in row 5, and the first 2 seats in row 6. The boys are trying to decide on a seating arrangement. How many different combinations of seating arrangements can the boys choose from?