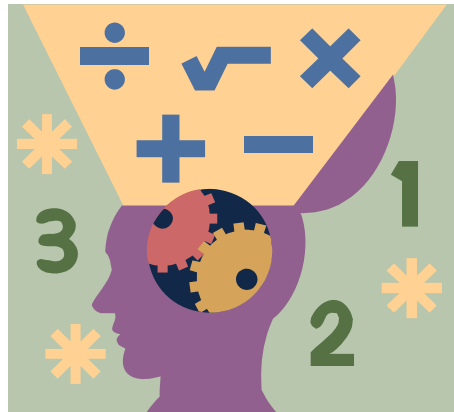# Bridgeport Public Schools
Mathematics Department

SUMMER MATH PACKET

FOR STUDENTS ENTERING SEVENTH GRADE
2018

Name _____

School _____

Parent's Signature _____

Parents,

This 'Summer Math Packet' was prepared to enhance your child's mathematics skills over the summer months and to ensure his/her success in the upcoming school year. The open-ended activities involve both skill development and problem solving. While most students should be able to complete the problems independently, some students may need your help in developing a work plan and in managing their time. Students are expected to complete the entire packet and return it to their school on the third day of school, September 5, 2017.

Students,

The purpose of this 'Summer Math Packet' is to give you a chance to practice some of the concepts you learned this past year in preparation for the upcoming school year. You must complete this packet to the best of your ability. This packet will be collected by your teacher on the third day of school.

Here are some helpful hints that will help you complete this packet:

- Show all work on each problem. When problems ask you to explain, be sure to write your answer using complete sentences, not just a few words.
- Do a little of your 'Summer Math Packet' each day. You are not expected to do it all on the first day.
- Try your best to solve every problem. If you need help, ask an adult or a friend, or visit some of the websites listed at the end of this packet.

Thank you and enjoy your summer.

Herminio Planas
Director of Mathematics
Bridgeport Public Schools

Summer Math Packet

Using the graph at the right, answer the following four questions...

1. How much money was spent on travel?
a. $50,000   b. $20,000
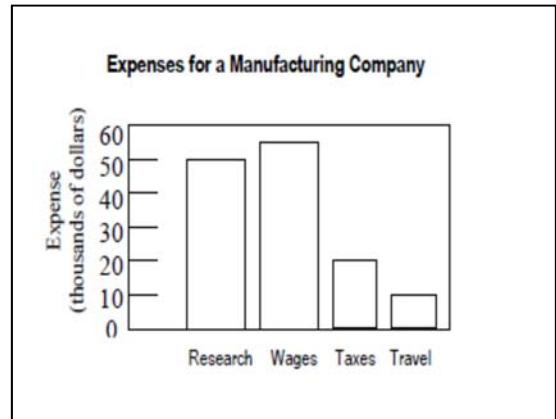c. $10,000   d. $55,000

2. Which expense was the greatest?
a. Research   b. Wages
c. Travel   d. Taxes

Expenses for a Manufacturing Company

3. How much more money was spent on wages than research?
a. $10,000   b. $5,000
c. $105,000   d. $30,000

4. Find the total amount of expenses.
a. $140,000   b. $5,000
c. $135,000   d. $84,000

Use the graph to the right and the following information to answer questions
5 – 8. **The graph shows the number of car sales for a new car dealer for the first three months of 2004 and 2005.**
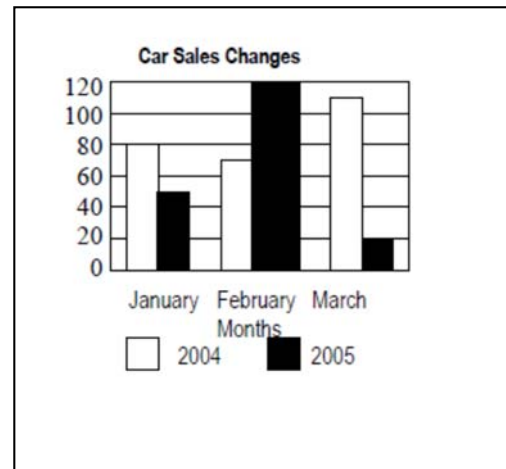
5. How many sales were in February 2004?
a. 70   b. 80   c. 100   d. 110

6. Find the greatest change in car sales for any month.
a. 120   b. 90   c. 100   d. 80

7. Find the total sales in 2004.
a. 260   b. 190   c. 450   d. 180

Car Sales Changes

8. How many more cars were sold in February 2005 than in February 2004?

a. 70 b. 95 c. 60 d. 50

9. Find the least change in car sales for any month.

a. 20 b. 15 c. 30 d. 10

OPEN ENDED QUESTION

10. The four classes of a local high school raised the amounts shown for new cheerleader uniforms. One student began drawing a bar graph to better display the data. He decided to label the vertical axis with the following numbers to represent amount raised: 200, 600, 800, and 1000.

Class	Amount raised
Seniors	$490
Juniors	$426
Sophomores	$440
Freshman	$268

Explain why or why not that was a good choice. If not, what would be a better choice? Then draw the BAR GRAPH.

_____
_____
_____
_____
_____

Number Patterns

Find the next term in each sequence…

11.   4, 8, 12, 16, 20, …

a. 36   b. 24   c. 160   d. 40

12.   10, 16, 22, 28, 34,…

a. 46   b. 38   c. 40   d. 62

13.   30, 24, 18, 12, …

a. 32   b. 6   c. 108   d. 0

14.   1, 6, 36, 216, …

a. 160   b. 525   c. 1296   d. 1596

15. Find the eighth term of the sequence: 3, 6, 9, 12, …

a. 15   b. 19   c. 24   d. 30

16. Find the seventh term of the sequence: 4, 8, 16, 32,…

a. 256   b. 215   c. 192   d. 64

17. What is the next number in the sequence? 3, 3, 6, 9, 15, 24, …
a. 39   b. 30   c. 54   d. 36

OPEN ENDED QUESTIONS

18. A hotel meeting room is equipped with rectangular tables that can seat one person at each of the shorter ends and four people at each of the longer ends. How many people can be seated if 8 of these tables are placed shorter end to shorter end? Draw a picture to help you solve the problem. Write two or three sentences that explain how you solved the problem.

_____
_____
_____
_____

19. What two numbers are next in this sequence?

13, 16, 21, 28, 37, _____, _____

Write two or three sentences that explain how you solved the problem.

20. What two numbers are next in this sequence?

2, 7, 17, 37, 77, _____, _____

Write two or three sentences that explain how you solved the problem.

_____

_____

_____

_____

Estimation

21. Round 8,842 to the nearest thousand.

a. 8,000   b. 9,000   c. 8,840   d. 8,800

22. Round 739 to the nearest hundred.

a. 800   b. 740   c. 750   d. 700

23. A city's population is 399,834. Which vacation brochure description of the size of the city is most accurate?
a. The city's population is about 399,000.
b. The city's population is about 400,000.
c. The city's population is about 395,000.
d. The city's population is about 300,000.

24. Round 346.648 to the nearest hundredth.

a. 346.65   b. 346.64   c. 346.6   d. 346.8

25. Terri needs to divide 3,041 by 504. To get a good ESTIMATE of this quotient, which expression would be BEST for Terri to use?

a. 3,000 / 700   b. 3,100 / 700
c. 3,000 / 800   d. 3,000 / 500

26. Megan asks the Deli owner for about four pounds of sliced turkey, which costs $6.21 per pound. ABOUT how much will the turkey cost?

a. $30   b. $38   c. $28   d. $24

27. Gertrude asks the same Deli owner for about 8 pounds of roast beef, which costs $3.75 per pound. ABOUT how much will Gertrude have to pay?

a. $68   b. $32   c. $27   d. $36

28. Melvin sees that ham is on sale for $4.25 per pound. If Melvin has $18, ABOUT how many pounds will be he able to buy?

a. 3 lbs.   b. 4 lbs.   c. 5 ½ lbs.   d. 62 lbs.

29. The average beginning salary for a zookeeper is $19,275. Which newspaper's description of the beginning salary is most accurate?

a. The average beginning salary for a zookeeper is about $19,000.
b. The average beginning salary for a zookeeper is about $19,300.
c. The average beginning salary for a zookeeper is about $18,000.
d. The average beginning salary for a zookeeper is about $20,000.

OPEN ENDED QUESTION

30. Seventeen employees of a store went out to dinner. The total bill was $426.80 including tip. Show the numbers you would use to ESTIMATE the cost per person. Then write two or three sentences that explain why you chose those numbers.

_____
_____
_____
_____
_____

31. Find 246 more than 396.
a. 273   b. 642   c. 123   d. 632

32. Beth works after school at a part time job. She works 3 hours on Monday, 4 hours on Wednesday, and 4 hours on Friday. Her pay for the 3 days is $15 on Monday, $20 on Wednesday, and $20 on Friday. Which numbers are needed to find out how much she earned altogether for the week?

a. $15, $10
d. 3, 4, 4,
e. $15, $20, $20
d. 4, 4

33. A rug has a width of 10 feet. The rug is to be centered in a room so that there is a 2 foot border of uncarpeted floor all around the rug. What other information is needed in order to find the length of the room.

a. The width of the room
b. The height of the room
c. The length and width of the door to the room
d. The length of the rug

34. Ms. Greco is building a fence around her rectangular garden. One length of the garden will be bordering a lake and will not need fencing. The length of the garden along the lake is 45 feet. What other information is needed in order to find the width of the garden?

a. Total amount of fencing   b. Width of the house
c. Length of the house   d. Length of the lake

35. A six-pack of small bottles of apple juice costs $4.20 . Find the cost of one bottle.
a. $0.75   b. $1.00   c. $0.70   d. $0.95

36. Bridget is shopping for sheets of plastic canvas and wants the best price. Which choice below will give her what she wants?

a. 2 dozen for $14.99   b. 4 for $3.50
c. 5 for $3.65   d. 1 dozen for $7.95

37. An assembly line worker packages textbooks for shipment. The size of the order is 87 books. If each carton holds at most 8 books, how many books will be in the last carton?

a. 5   b. 7   c. 9   d. 88

38. It takes exactly 8 cassette tapes to fill each box. Since Alberto began packing he has filled as many boxes as he could with 115 tapes. Which box is he now packing?

a. 5th   b. 13th   c. 15th   d. 12th

39. A man walked from Bridgeport, CT to San Diego, CA, a distance of approximately 3,000 miles. It took him 110 days to complete the walk. How many miles per day, on average, did he walk?

a. 70 miles   b. 42 miles   c. 30 miles   d. 4 miles

40. There are 18 oranges in a carton. How many oranges are in 45 cartons?

a. 3   b. 60   c. 810   d. 81

Appropriate Units of Measure

What unit of measure would be most appropriate to measure each of the following? (Examples #41 - #45)

41. Length and width of the cover of this packet.

a. cm   b. km   c. m   d. mm

42. Weight of a SUNDAY newspaper.

a. m   b. g   c. mL   d. kg

43. Distance between exits on The Merritt Parkway.

a. L   b. m   c. kg   d. km

44. Amount of soda in a large bottle of cola.

a. L   b. kg   c. kL   d. m

45. The thickness of a match.

a. m   b. mm   c. cm   d. km

46. Rover weighed 120 kg, but lost 4kg 700g . Find his new weight.

a. 106 kg 700 g   b. 115 kg 700 g
c. 115 kg 300 g   d. 116 kg 300 g

47. The BEST unit to measure the weight of a school bus would be

a. ounces   b. pounds   c. tons   d. grams

48. How many milliliters are in 45 liters?

a. 0.45mL   b. 450 mL   c. 4500 mL   d. 45,000 mL

49. Kara ran 8 km 400 m on Thursday and 6 km 800 m on Saturday. How far did she run altogether on the two days?

a. 15 km 200 m
b. 14 km 200 m
c. 14 km 300 m
d. 15 km 300 m

OPEN ENDED QUESTION

50. Write three or four sentences explaining how to determine whether grams, kilograms, or milligrams should be used to measure the weight of an object. Use sample objects in your explanation.

_____
_____
_____
_____
_____
_____
_____
_____

Fractions and Decimals

The shaded part of the picture shows which fraction or mixed number?

51.

a. 8/9   b. 2 2/3   c. 1 2/3   d. 1 ¼

52.

a. 1 3/5   b. 2 3/5   c. 3/5   d. 2 6/9

53.

a. 2 5/8   b. 2 ¾   c. 16/28   d. 2 7/8

54.

a. 3 1/3   b. 2 1/3   c. 9/30   d. 3 1/9

55.

a. 2 ¾   b. 2 ¼   c. 2 2/7   d. 1 ¼

56. Which of the following is equivalent to 8 ¾ ?

a. 8.5   b. 8.34   c. 8.75   d. 8.3

57. Which of the following is equivalent to 5.75?
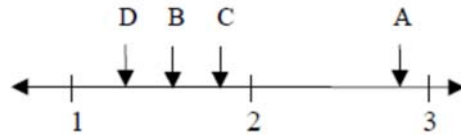
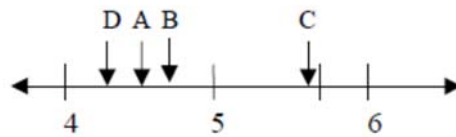a. 5 ½   b. 57 ½   c. 5 ¼   d. 5 ¾

58. Which lettered arrow BEST shows 2 5/6 on the number line?

a. A   b. B   c. C   d. D

59. Which lettered arrow BEST shows 4 3/7 on the number line?

a. **A**   b. **B**   c. **C**   d. **D**

OPEN ENDED QUESTION

60. Draw a number line showing the locations of the numbers 3, 4, 5, and 6.
Explain how to draw a lettered arrow BEST showing the mixed number 5 ¾.
Then show the result. Will the number 5 5/6 be to the left or right of 5 ¾?
Explain how you drew your conclusion.

_____

_____

_____

_____

Statistics and Probability

Use the data 97, 100, 98, 94, 94, and 88 to answer questions #61 and #62.

61. Mean:
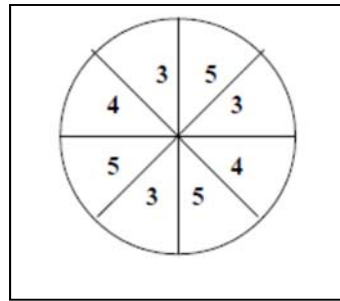
a. 96   b. 95.5   c. 95.17   d. 97

62. Median:

a. 95.3   b. 95   c. 95.5   d. 96

63. What is the probability of the spinner landing on 5?

a. 1/8   b. 3/8   c. 1/9   d. 2/8

64. The spinner was spun and landed on a 4. If it is spun again, what is the probability that it will land on a 4 again?

a. 1/8   b. 3/8   c. 1/9   d. 1/4

65. A bag contains 25 coins. There are 6 quarters, 4 dimes, 5 nickels, and the rest are pennies. One coin is drawn at random. Find the probability that it will be a nickel.

a. 2/5   b. ½   c. 1/5   d. 3/5

66. A bag of 21 marbles contains 9 green marbles, 5 blue marbles, and the rest are red. One marble is drawn at random. Find the probability that it will be red.

a. 2/9   b. 1/3   c. 4/9   d. ¾

67. A deck of 52 cards contains 12 face cards, one half of which are black. What are the chances that a card drawn at random from a full deck will be a red face card?

a. 12 out of 52   b. 3 out of 52
c. 3 out of 26   d. 1 out of 2

68. If one card is drawn at random from a standard deck of 52 cards, what is the probability of choosing a 10 of spades?

a. 3/52   b. 1/26   c. 1/13   d. 1/52

69. A coin is tossed to assign each of 14 baseball players to one of two teams. Each team MUST have 7 members. Is this a good method?

a. Yes – since the probability of heads is equal to the probability of tails
b. No - because the outcomes may be different
c. Yes – since each player tosses the coin
d. No – because tails are more likely to occur

OPEN ENDED QUESTION

70. Arlene tosses a nickel in the air 100 times. What is the probability that it will land tails up on the 40th toss? Write one or two sentences explaining your answer.

_____
_____
_____
_____

Basic Operations with Fractions

71. $7/15$ ¾ =

a. $11/19$ b. $2/5$ c. $7/20$ d. $1/6$

72. $7/3$ $9/14 =$

a. $3/7$ b. 1 ½   c. $2/3$ d. $6/7$

73. 5 x 4 $2/3 =$

a. 21 $2/3$ b. 23 $1/3$ c. 13 $1/3$ d. 65 $1/3$

74. 2 ½ x 4 =

a. $5/6$ b. 8   c. 7 ½   d. 10

75. $4/7 + 1/14 =$

a. $4/21$ b. ½   c. $5/14$ d. $9/14$

76. $2/3$ $1/6 =$

a. $1/9$ b. $1/3$ c. $1/6$ d. ½

77. 6 ½ + 7 ¾ =

a. 13 $5/7$ b. 13 ¼   c. 14 ¼   d. 14 $5/8$

78. 4 $1/3$ 2 $5/6$ =

a. 1 ½   b. 2 ½   c. 2 $1/3$ d. 6 $1/6$

79. Tom needs to add $7/11$ and $2/3$. To get a good ESTIMATE of the sum, which expression would be BEST for Tom to use?

a. ½ + 1
b. ½ + ½
c. 1 + 1
d. 1 + 3

OPEN ENDED QUESTION

80. 8   2 ¾
Write one or two sentences explaining how you re-wrote 8 to get your answer.

_____

_____

_____

_____

_____

Decimals

81. Martha wants to subtract 7.91 from 16.2 . To get a good ESTIMATE of this difference, which expression would be BEST for Martha to use?

a. 16 – 7
b. 15 – 6
c. 16 – 8
d. 17 – 8

82. Hillary wants to multiply 8.83 and 7.02 . To get a good ESTIMATE of this product, which expression would be BEST for Hillary to use?

a. 10 x 800
b. 8 x 7
c. 10 x 8
d. 9 x 7

83. Michael wants to divide 28.89 by 7.06 . To get a good ESTIMATE of this quotient, which expression would be BEST for Michael to use?

a. 29 / 7
b. 30 / 5
c. 25 / 5
d. 29 / 8

84. Randolph wants to add 49.93 and 19.41 . To get a good ESTIMATE of this sum, which expression would be BEST for Randolph to use?

a. 50 + 21
b. 49 + 19
c. 50 + 19
d. 50 + 20

85. Will wants to organize his fishing weights from heaviest to lightest. If the weights are 4/5 ounce, 1/3 ounce, and 5/8 ounce, how should he organize the weights from HEAVIEST to the LIGHTEST?

a. 1/3 ounce, 5/8 ounce, 4/5 ounce
b. 5/8 ounce, 4/5 ounce, 1/3 ounce
c. 1/4 ounce, 2/3 ounce, 5/8 ounce
d. 4/5 ounce, 5/8 ounce, 1/3 ounce

86. A survey of the 7th graders at No Name Middle School shows that 1/15 of the students are in Spanish, 6/15 of the students take Music Appreciation, 2/15 of the students take the bus to school, and 8/15 of the students are out for some sport. Which fraction represents the LARGEST number of 7th graders?

a. 1/15
b. 2/15
c. 8/15
d. 7/15

87. If 57.8 were put into the following lists so that the lists were then ordered from SMALLEST to LARGEST, in which list would 57.8 be the SECOND number?

a. 57.1, 58.2, 58.5
b. 57.13, 57.61, 57.75
c. 57.11, 57.69, 57.85
d. 57.01, 57.03, 57.08

OPEN ENDED QUESTIONS

88. Joseph needs to subtract 5.73 from 12.9 . Show the whole numbers that he should use to ESTIMATE this difference. Then, WRITE one or two sentences to explain why he should use these numbers.

_____
_____
_____
_____

89. Tanya wants to select the SMALLEST fraction from the set of fractions 14/19,12/19, 18/19, 13/19 . WRITE one or two sentences that explain how to do this in TWO different ways.

_____
_____
_____
_____

90. Consider the numbers 2/3, 5/9, and 7/8. Organize them in order of magnitude from SMALLEST to LARGEST. WRITE one or two sentences explaining what you did.

_____

_____

_____

_____

General Review and Practice

91. What fraction could best be used to estimate the value of 13% ?

a. $1/6$ b. $1/8$ c. $1/10$ d. $1/9$

92. What is the best estimate for 33 x 97?

a. 30 x 90   b. 30 x 100   c. 40 x 90   d. 40 x 100

93. If you add 1 more side to a triangle you would have a

a. pentagon   b. hexagon   c. quadrilateral   d. triangle

94. 3 ¾ x 1 $2/3$ =

a. 5 ¼   b. 6 ¼   c. 5 $7/12$ d. 6 ½

95. Fill in the missing times in this sequence...

<div align="center">10:10, 11:45, _____, 2:55, _____</div>

a. 1:15 and 4:30
b. 1:00 and 4:00
c. 1:20 and 4:30
d. 1:10 and 4:15

96. Jonathan took 8 ounces of peanuts out of a 2 lb can. What fraction shows how much is left?

a. $1/4$ b. $1/3$ c. ½   d. ¾

Consider the following numbers: 5, 10, 15, 20, 25

97. What is the median?

a. 10   b. 15   c. 12.5   d. 20

98. What is the mean?

a. 10   b. 15   c. 12.5   d. 20

OPEN ENDED QUESTIONS

99. Lana has a friend who is deaf and uses sign language to communicate. She can sign about 34 concepts per minute. How many concepts can she sign in a 15-minute period? Write one or two sentences explaining how you solved this problem.

_____
_____
_____
_____

100. Ben lives in New York City; his cousin, Beth, lives in Los Angeles, California. It is three hours earlier in Los Angeles than New York City. Ben went to the show at 8:50 PM and returned 2 ½ hours later. What time was it in Los Angeles when Ben called Beth after the show? Write one or two sentences explaining how you got your answer.

_____
_____
_____
_____

The Three Little Ompas

DIRECTIONS: Do your rough draft work on a separate paper and attach it to this sheet. On this sheet, show your work for each of the questions. At the end of the paper, write an explanation of how you solved the problem.

On the way home from school, Sally McCrackin likes to eat peanuts. One day, just as she was reaching into her school bag, a hideous laughing creature jumped in front of her, identified itself as an OMPA, and grabbed her sack. It took half of the peanuts plus two more. A bit shaken, Sally continued home. Before she had a chance to eat even one more peanut, another Ompa jumped into her path and also took half of her peanuts plus two more. Very upset now, Sally hurried on home. What else could she do? But before she had a chance to eat even one more peanut, another Ompa jumped out and did the very same thing – took half of her peanuts plus two more. Now there were only two peanuts left in Sally's bag. She was so sad that she sat down and cried. The three little Ompas reappeared, feeling some sense of remorse, and told her that they would return all of her peanuts to her if she could tell them how many she had altogether when she began her journey home from school.

1. How many peanuts had been in Sally's school bag?

2. Suppose Sally had been left with 3 peanuts. How many had been in her bag?

3. Suppose there had been 4 OMPAS. Can you find a way to predict how many peanuts Sally had in her bag at the start of her journey, regardless of how many she was left with or how many OMPAS took peanuts from her?

_____
_____
_____
_____