KING SCHOOL

Summer 2026 Mathematics Assignment

FOR STUDENTS ENTERING MAT 701

This math packet provides an opportunity for you to keep your math skills sharp over the summer by practicing what you learned this year. Complete all work **independently** and in the space provided, then circle your final answer. At the start of the school year, this will be collected and will be entered as your first homework grade. If you are confused on a particular topic, please refer to your Math in Focus textbook, your notes from MAT 601 or look up the topic name on Khan Academy or Math Playground.

NO CALCULATOR!!

NAME: _____

KING SCHOOL
2026 MATH SUMMER ASSIGNMENT

DIRECTIONS:

- Please read all directions carefully.
- All work should be done directly on this packet. If you need more space to show your work, please use a separate sheet of paper labeling the section and problem number/letter. Then attach the extra sheets to the back of this packet. If you use additional pages to show your work, **ALL FINAL ANSWERS MUST STILL BE WRITTEN AND CIRCLED IN THE ORIGINAL PACKET.**
- Every final answer should be **circled**.
- Show all of your work. **NO CALCULATORS** may be used when working through this packet. It is expected that all of your calculations are completed on each page.
- You may use your notes from MAT 601 as well as any educational resource on the internet (Khan Academy or Math Playground).
- Working with a tutor on the exact problems in this packet is **NOT** permitted.
- **This assignment will be collected at the beginning of our first class and will be graded as your first homework assignment!**

Good Luck! Take Risks!

Have fun exercising your math brain!!

I have read and understand all of the directions written above and I have completed this packet in its entirety independently and without a calculator.

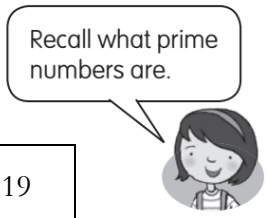
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MAT 601 MATERIAL

- ◊ **WHOLE NUMBERS, PRIME NUMBERS & FACTORIZATION**
  - Prime Factorization
  - Common Factors and Multiples
- ◊ **NUMBER LINES & NEGATIVE NUMBERS**
  - The Number Line
  - Negative Numbers
  - Absolute Value
- ◊ **FRACTIONS & DECIMALS**
  - Dividing Fractions
  - Real-World Problems: Fractions
  - Adding and Subtracting Decimals Fluently
  - Multiplying Decimals Fluently
  - Dividing Decimals Fluently
  - Real-World Problems: Decimals
- ◊ **RATIO**
  - Comparing Two Quantities
  - Equivalent Ratios
  - Real-World Problems: Ratios
- ◊ **RATES & SPEED**
  - Rates and Unit Rates
  - Real-World Problems: Rates and Unit Rates
- ◊ **PERCENT**
  - Understanding Percent
  - Fractions, Decimals and Percent
  - Percent of a Quantity
  - Real-World Problems: Percent
- ◊ **ALGEBRAIC EXPRESSIONS**
  - Using Letters to Represent Numbers
  - Evaluating Algebraic Expressions
  - Simplifying Algebraic Expressions
  - Expanding and Factoring Algebraic Expressions
  - Real-World Problems: Algebraic Expressions
- ◊ **EQUATIONS & INEQUALITIES**
  - Solving Algebraic Equations

WHOLE NUMBERS, PRIME NUMBERS & FACTORIZATION

SECTION 1.1: PRIME FACTORIZATION



1) Circle all the prime numbers.

1	3	5	7	9	11	13	15	17	19
21	23	25	27	29	31	33	35	37	39
41	43	45	47	49	51	53	55	57	59
61	63	65	67	69	71	73	75	77	79
81	83	85	87	89	91	93	95	97	99

Express each number as a product of its prime factors.

2) 18

3) 325

SECTION 1.2: COMMON FACTORS AND MULTIPLES

Find the common factors of each pair of numbers.

4) 18 and 50

5) 36 and 90

Find the greatest common factor and the least common multiple of each set of numbers.

6) $14, 28,$ and 49

7) $46, 64,$ and 72

Number Lines & Negative Numbers

Section 2.1: The Number Line

Compare each pair of numbers using > or <.

8) $\frac{7}{4}$ _____ $2\frac{1}{4}$

9) $6\frac{3}{5}$ _____ $6\frac{5}{6}$

10) 84.97 _____ 84.79

11) 2.5 _____ $2\frac{3}{4}$

12) $\frac{7}{5}$ _____ 1.75

13) $12\frac{5}{8}$ _____ 12.58

Section 2.2: Negative Numbers

Complete each inequality using > or <.

14) 8 _____ -12

15) -29 _____ -22

16) -42 _____ 35

Answer the following question.

17) Jack and Lily both started with 0 points at the beginning of a board game. During the game, Jack lost 220 points and Lily lost 180 points. Who had fewer points at the end? Write an inequality statement to compare their results at the end of the game.

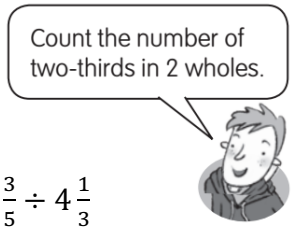
Section 2.3: Absolute Value

Complete each inequality using > or <.

18) $|18|$ _____ $|-44|$

19) $|200|$ _____ $|-400|$

FRACTIONS & DECIMALS



SECTION 3.1: DIVIDING FRACTIONS

Divide. Write each quotient in simplest form. Circle your final answer.

20) $4 \div \frac{1}{5}$

21) $\frac{3}{5} \div 3$

22) $2\frac{3}{5} \div 4\frac{1}{3}$

SECTION 3.2: REAL-WORLD PROBLEMS: FRACTIONS

Solve.

23) Jacob had $3\ kilograms$ of flour. He used $\frac{3}{4}\ kilograms$ of the flour to make bread every day. How many days did he take to finish all the flour?

24) Ms. Morgan went for a vacation for 20 days. She spent $\frac{2}{5}$ of her vacation time in Asia and the rest in Europe. In Asia, she spent $\frac{1}{2}$ of her time in Thailand.

a. What fraction of her vacation time did Ms. Morgan spend in Thailand?

b. How many days did she spend in Thailand?

SECTION 3.3: ADDING AND SUBTRACTING DECIMALS FLUENTLY

Write in vertical form. Then, subtract.

25) $34.656 - 12.92$

26) $67.89 - 23.498$

SECTION 3.4: MULTIPLYING DECIMALS FLUENTLY

Write in vertical form. Then multiply.

27) 12.8×0.4

30) 0.9×0.8

33) 0.25×6.9

28) 5.2×0.9

31) 5.82×0.78

34) 0.45×0.91

29) 0.524×10

32) $0.01 \times 0.167 \times 0.9$

35) 4.8×1.231

SECTION 3.5: DIVIDING DECIMALS FLUENTLY

Divide. Write your final answer in the space provided.

36) $64 \div 0.32$

_____

37) $169 \div 0.13$

_____

38) $0.48 \div 0.06$

_____

39) $0.432 \div 0.16$

_____

40) $5.1 \div 0.3$

_____

41) $8.52 \div 1.2$

_____

SECTION 3.6: REAL-WORLD PROBLEMS: DECIMALS

Solve.

42) The volume of water in a tank was $9.56\ liters$. Nicole scooped out $0.693\ liter$ of water from the tank. How many liters of water are left in the tank?

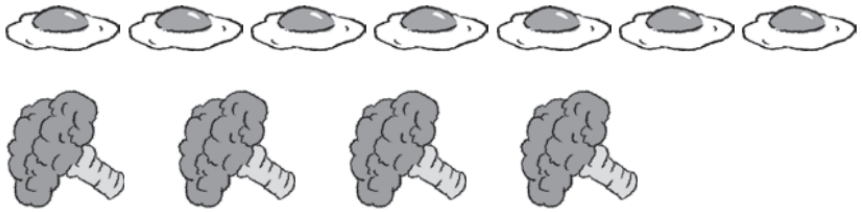
43) A store owner has $14.12\ pounds$ of salt. He stores the salt into 8 containers equally. How many pounds of salt are there in each container?

RATIO

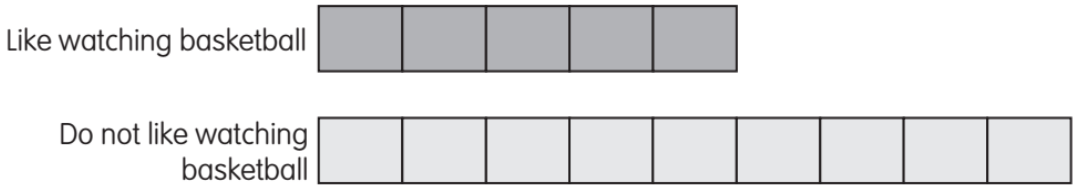
SECTION 4.1: COMPARING TWO QUANTITIES

Write two ratios to compare the quantities.

44)



45) In a survey, 5 people said they like watching basketball and 9 people said they do not like watching basketball.



Solve.

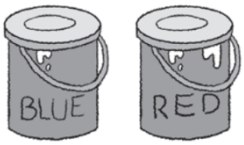
46) There are 94 apples in a box. 37 of them are red and the rest are green.

a. What is the ratio of the number of red apples to the number of green apples?

b. What is the ratio of the number of green apples to the total number of apples?

47) The ratio of the volume of blue paint to the volume of red paint is $8:7$.

a. Express the difference between the volume of the blue paint and the volume of red paint as a fraction of the total volume of blue and red paint.



b. Express the volume of blue paint as a fraction of twice the volume of red paint.

SECTION 4.2 EQUIVALENT RATIOS

Use division to find all whole number ratios equivalent to each of the following.

48) $8:36$

49) $12:52$

State whether each pair of ratios are equivalent.

50) $12:27$ and $4:9$

51) $9:6$ and $6:9$

52) $8:36$ and $4:18$

Express each ratio in its simplest form.

53) $45:15$

54) $3\ yd:3\ ft$

Find the missing term of each pair of equivalent ratios.

55) $42 : 18 = \ ? \ : 3$

? = _____

56) $? \ : 24 = 7 : 6$

? = _____

Fill in the table.

57) Diego records the amount of orange syrup and water he used to make four mixtures of orange drink using identical cups of orange syrup and water.

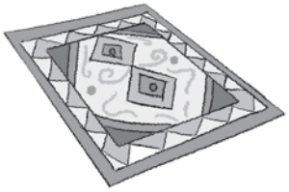
Mixture	A	B	C	D
Number of Cups of Orange Syrup	3	6	9	12
Number of Cups of Water	7	14	21	28
Orange Drink : Water	3 : 7			
Orange Drink : Water (Simplest Form)	3 : 7			
$\frac{\textbf{Number of Cups of Orange Drink}}{\textbf{Number of Cups of Water}}$	$\frac{3}{7}$			

What do you notice about the ratios of the four mixtures of orange drink?

SECTION 4.3: REAL-WORLD PROBLEMS: RATIOS

Solve.

58) The cost of a carpet is $45. Daniel and Sophia bought the carpet and share the cost in the ratio 4 : 5. How much did Daniel pay for the carpet? Draw a bar model.



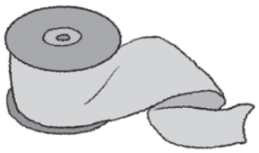
59) The ratio for the amount of money Rachel saved to the amount of money Timothy saved was 12 : 13. After Timothy spent $27, Rachel had 3 times as much as Timothy.

a. How much did Rachel save?

b. How much did they save altogether at first?

60) A $54\ inch$ long ribbon is cut into 3 strips in the ratio $2:3:5$.

a. What is the length of the longest piece?



b. How much longer is the longest piece than the shortest piece?

c. What is the length of the shortest piece if they were cut in the ratio $1:2:3$?

RATES & SPEED

SECTION 5.1: RATES AND UNIT RATES

Solve.

61) It takes 9 minutes for a flowing faucet to fill up a $27-gallon$ tank. How much water flows from the faucet in $1\ minute$?

62) Ms. Hughes pays $\$2{,}191$ to stay one week in a hotel. How much does she pay per day?

SECTION 5.2: REAL-WORLD PROBLEMS: RATES AND UNIT RATES

Solve.

63) The table shows the cost of three different types of flour sold at a grocery store. Fill in the table. *Round your answers to the nearest hundredth of a dollar.*

TYPE OF FLOUR	AMOUNT PAID	AMOUNT PURCHASED	COST PER POUND
Cake	$\$21.60$	$10\ lb$	
Pastry	$\$8.60$	$2\ lb$	
Self-raising		$4\ lb$	$\$5.20$

a. Which type of flour costs the most per pound?

b. What is the price difference per pound between the most expensive flour and the cheapest flour?

PERCENT

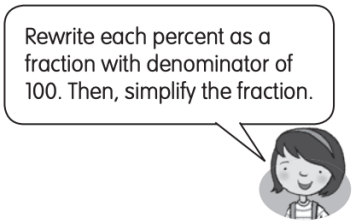
SECTION 6.1: UNDERSTANDING PERCENT

Solve.

64) Of the 500 vehicles that passed a junction, 108 are taxis. What percent of the vehicles that passed the junction are taxis?

65) Out of 40 questions, Jordan answered 18 of them incorrectly. What percent of the questions did he answer correctly?

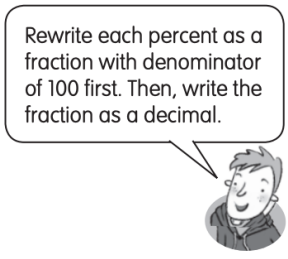
Express each percent as a fraction or a mixed number in simplest form.



66) 86%

67) 675%

Express each percent as a decimal.

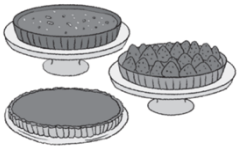


68) 7%

69) 367%

Solve.

70) In a bakery, 14 chocolate tarts, 24 strawberry tarts, and 10 cheese tarts are made. What percent of the tarts are chocolate?



SECTION 6.2: FRACTIONS, DECIMALS AND PERCENT

Express each fraction or mixed number as a percent.

71) $\frac{13}{25}$

72) $3\frac{3}{4}$

73) $8\frac{17}{20}$

Express each decimal as a percent.

74) 0.78

75) 6.25

76) 32.5

Express each percent as a fraction in simplest form.

77) 0.8%

78) 45.5%

79) $57\frac{2}{5}\%$

Solve.

80) A group of children were surveyed and asked to name their favorite color. The table shows the results of the survey.

RED	ORANGE	GREEN	BLUE	YELLOW
16	20	40	14	30

a. What percent of the students preferred green?

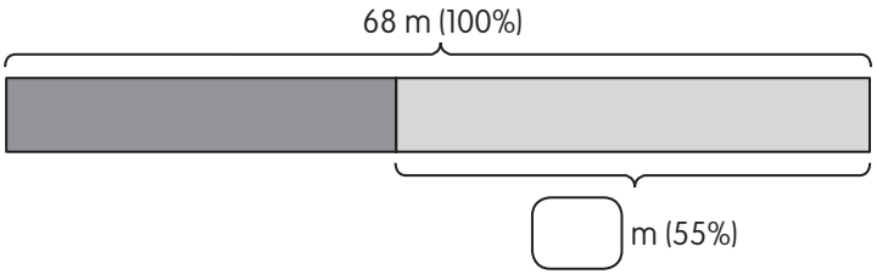
b. What percent of the students preferred the least favorite color?

c. What percent of the students preferred yellow or orange?

SECTION 6.3: PERCENT OF A QUANTITY

Solve. Use the bar model to help you.

81) Luis ran 68 meters and Mandy ran 55% of the distance Luis ran. How far did Mandy run?



Find the quantity represented by each percent.

82) 36% of 540 gallons

83) 110% of $\$610$

Solve.

84) 15% of a number is 30. Find the number.

85) A bean bag is filled with red and green beans. Of the total number of beans, 30% are red. There are 720 red beans. How many beans are there in the bag?

86) Ms. Stewart has $\$660$. She uses 30% of her money to buy a dress and 20% of the remainder to buy a pair of shoes. How much does she have left?



87) A box contains 160 pieces of fruit. 15% of the pieces of fruit are apples, 25% of the remaining are melons, and the rest are oranges. How many oranges are there in the box?

SECTION 6.4: REAL-WORLD PROBLEMS: PERCENT

Solve. Check that each answer is reasonable.

88) Destiny collects 90 bottles to recycle. 27 of the bottles are plastic and the rest are glass.

a. What percent of the bottles are plastic?



b. What percent of the bottles are glass?

ALGEBRAIC EXPRESSIONS

SECTION 7.1: USING LETTERS TO REPRESENT NUMBERS

Write an algebraic expression for each statement.

89) Sum of h and 4

90) x more than 12

91) Quotient of p and 3

92) Subtract 8 from d

93) 6 less than b

94) 7 groups of c

95) Nellie has q stickers.

a. Jane has 9 fewer stickers than Nellie. How many stickers does Jane have in terms of q?

b. Jacob has 4 times as many stickers as Nellie. How many stickers does Jacob have in terms of q?

c. Fred has 23 more stickers than Nellie. How many stickers does Fred have in terms of q?

d. Karen has $\frac{3}{7}$ as many stickers as Nellie. How many stickers does Karen have in terms of q?

96) Add 15 to the product of y and 3.

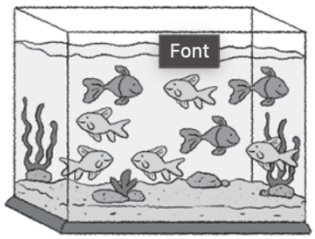
97) The price of a sling bag, given that it costs twice as much as a box of cards that costs m dollars.

98) The total number of seashells Mandy and Ken have, given that Mandy has $4s$ seashells and Ken has 12 more seashells that Mandy.

Solve.

99) In a bakery, a bag of croissants costs y dollars. A loaf of multi-grain bread costs $\$3$ more than a bag of croissants. Mr. Potter pays $\$45$ for some loaves of multi-grain bread. Write the number of loaves of bread he buys in terms of y.

100) Ben has some goldfish in a fish tank. The ratio of orange goldfish to yellow goldfish is $3:5$. He has $6f$ orange goldfish. Write the number of yellow goldfish he has in terms of f.



SECTION 7.2: EVALUATING ALGEBRAIC EXPRESSIONS

Evaluate each expression for the given value of the variable.

101) $9b - 8$ when $b = 3$

102) $20 + \frac{7}{8}e$ when $e = 16$

Solve.

103) There are x colored pencils in a box. Write an expression in terms of x for each statement and evaluate the expression when $x = 24$.

a. The number of colored pencils in 3 boxes.

b. The number of colored pencils each child gets when a box of colored pencils and 6 colored pencils are shared equally among 5 children.

Evaluate each expression when $r = 8$.

104) $6(4r + 3) - 2(5r - 8)$

105) $\frac{5r+6}{6} + \frac{3r-2}{4} + \frac{3r}{2}$

Evaluate each of the following when $k = 5$.

106) Subtract 40 from the sum of $8k$ and 12.

107) Product of $(3k + 1)$ and $(3k - 5)$

108) Sum of $\frac{5(k+3)}{6}$ and $\frac{2(k-1)}{3}$

109) Divide $4(k - 1)$ by $(k + 5)$

SECTION 7.3: SIMPLIFYING ALGEBRAIC EXPRESSIONS

Simplify each expression.

110) $15f + 4f - 5f - 2f$

111) $21s - 19 + 2s - 24s + 15 - 7s$

State whether each pair of expressions is equivalent.

112) $7h$ and $7 + h$

113) $4k + 3k$ and $\frac{18k}{6} + 2k$

Solve.

114) Lucas had $20b\ liters$ of milk. He drank $3b\ liters$ of milk every day. How much milk was left after 4 days?

115) The cost of a doll is $7x\ dollars$ and the cost of a key chain is $x\ dollars$. Find the total cost of the 3 dolls and 4 key chains in terms of x.



SECTION 7.4: EXPANDING AND FACTORING ALGEBRAIC EXPRESSIONS

Factor each expression.

116) $9 - 18f$

117) $30h + 15$

State whether each pair of expressions is equivalent.

118) $10(3 + 4k)$ and $40k + 30$

119) $3(n + 3)$ and $9n + 9$

Simplify each expression. Then, factor the expression.

120) $3(4 + 5u) + 6(3u + 8)$

121) $4v - 12 + 9(3 - v)$

Solve.

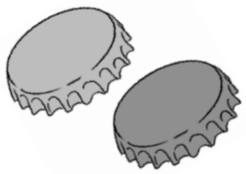
122) A train is moving at an average speed of $(4a + 7)$ $miles\ per\ hour$. Write an expression in terms of a for the distance traveled by the train in 4 $hours$.



SECTION 7.5: REAL-WORLD PROBLEMS: ALGEBRAIC EXPRESSIONS

Solve.

123) Amanda, Bruno and Carla collected bottle caps for charity. Amanda collected $(4f - 3)$ bottle caps. Bruno collects twice as many bottle caps as Amanda. Carla collects $3(5 + 2f)$ bottles. How many bottles did they collect altogether in terms of f?



EQUATIONS & INEQUALITIES

SECTION 8.1: SOLVING ALGEBRAIC EQUATIONS

Solve each equation using the concept of balancing.

124) $3h = 12$

125) $\frac{j}{3} = 9$

Solve each equation using inverse operations. Express each answer in its simplest form.

126) $\frac{5}{6} + \ell = \frac{7}{6}$

127) $\frac{3}{4}n = 6$

128) $2p = \frac{1}{3}$

129) $r + 1.4 = 4.6$

130) $34.9 - v = 20.1$

131) $3.4w = 51$



GREAT WORK!!!!
YOU HAVE OFFICIALLY COMPLETED YOUR 2026 MATH SUMMER PACKET!