Name: _____

2026-2027

King School Summer Math

Students Entering MAT 702

1. **All work should be completed in this packet.**

2. **Each problem should be clearly labeled with the problem number.**

3. **Every answer should be circled.**

4. **No final answers without supporting work will be accepted and will be required to be resubmitted.**

5. **Please be sure to use notes from the previous years as well educational resources such as Khan Academy, IXL, etc.**

6. **Working with a tutor on these exact problems is NOT permitted.**

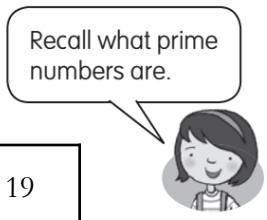
7. **Calculators and Photomath are NOT permitted.**

MAT 602 MATERIAL

- ◊ **Whole Numbers, Prime Numbers & Factorization**
  - o Prime Factorization
  - o Common Factors and Multiples
- ◊ **Number Lines & Negative Numbers**
  - o The Number Line
  - o Negative Numbers
  - o Absolute Value
- ◊ **Fractions & Decimals**
  - o Adding Fractions
  - o Subtracting Fractions
  - o Dividing Fractions
  - o Real-World Problems: Fractions
  - o Adding and Subtracting Decimals Fluently
  - o Multiplying Decimals Fluently
  - o Dividing Decimals Fluently
  - o Real-World Problems: Decimals
- ◊ **Ratio**
  - o Comparing Two Quantities
  - o Equivalent Ratios
  - o Real-World Problems: Ratios
- ◊ **Rates & Speed**
  - o Rates and Unit Rates
  - o Real-World Problems: Rates and Unit Rates
- ◊ **Percent**
  - o Understanding Percent
  - o Fractions, Decimals and Percent
  - o Percent of a Quantity
  - o Real-World Problems: Percent

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

Section 1.2: Common Factors and Multiples

Find the common factors of each pair of numbers.

3) 18 and 50

4) 36 and 90

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

5) 14, 28, and 49

6) 46, 64, and 72

Number Lines & Negative Numbers

Section 2.1: The Number Line

Compare each pair of numbers using > or <.

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

8) $6\frac{3}{5}$ _____ $6\frac{5}{6}$

9) 84.97 _____ 84.79

10) 2.5 _____ $2\frac{3}{4}$

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

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

Section 2.2: Negative Numbers

Complete each inequality using > or <.

13) 8 _____ -12

14) -29 _____ -22

15) -42 _____ 35

Answer the following question.

16) 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 <.

17) $|18|$ _____ $|-44|$

18) $|200|$ _____ $|-400|$

Fractions & Decimals

Fraction Addition

Add the following fractions with regrouping.

19) $9\frac{11}{12} + \frac{5}{12}$

21) $\frac{5}{8} + 7\frac{7}{8}$

23) $\frac{8}{9} + 1\frac{7}{9}$

20) $\frac{7}{12} + 6\frac{7}{12}$

22) $\frac{5}{6} + 6\frac{5}{6}$

24) $\frac{7}{12} + 5\frac{11}{12}$

Fraction Subtraction

Subtract the following fractions with regrouping.

25) $1\frac{4}{9} - \frac{7}{9}$

27) $3\frac{7}{12} - \frac{11}{12}$

29) $3\frac{11}{14} - \frac{13}{14}$

26) $5\frac{7}{15} - \frac{13}{15}$

28) $4\frac{5}{12} - \frac{11}{12}$

30) $8\frac{5}{9} - \frac{8}{9}$

Section 3.1: Dividing Fractions

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

31) $4 + \frac{1}{5}$

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

33) $2\frac{3}{5} \div 4\frac{1}{3}$

Section 3.2: Real-World Problems: Fractions

Solve.

34) 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?

35) 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.

36) $34.656 - 12.92$

37) $67.89 - 23.498$

Section 3.4: Multiplying Decimals Fluently

Write in vertical form. Then multiply.

38) 0.2×8

39) 12.8×0.4

40) 5.2×0.9

41) 0.524×10

42) 0.89×0.3

43) 0.9×0.8

44) 7.1×5.6

45) 5.82×0.78

46) $0.01 \times 0.167 \times 0.9$

47) 0.25×6.9

48) 0.45×0.91

49) 4.8×1.231

Section 3.5: Dividing Decimals Fluently

Divide. Write your final answer in the space provided.

50) $65 \div 0.5$

_____

51) $64 \div 0.32$

_____

52) $256 \div 0.4$

_____

53) $169 \div 0.13$

_____

54) $0.9 \div 0.3$

_____

55) $0.48 \div 0.06$

_____

56) $0.432 \div 0.16$

_____

57) $5.1 \div 0.3$

_____

58) $8.52 \div 1.2$

_____

Section 3.6: Real-World Problems: Decimals

Solve.

59) 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?

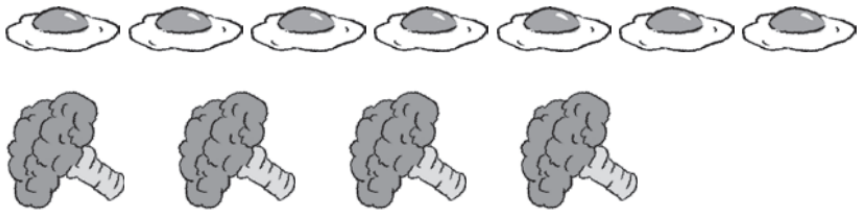
60) A store owner has $14.12\ pounds$ of salt. He stores the salt into 8 containers equally. How many pounds of salt are there in each container?

Ratio

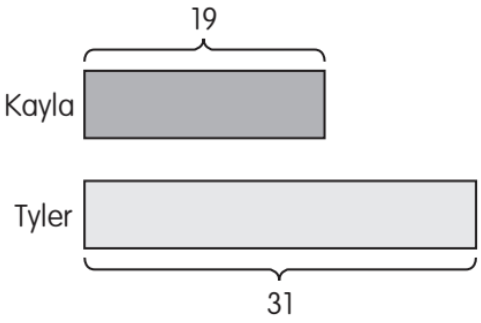
Section 4.1: Comparing Two Quantities

Write two ratios to compare the quantities.

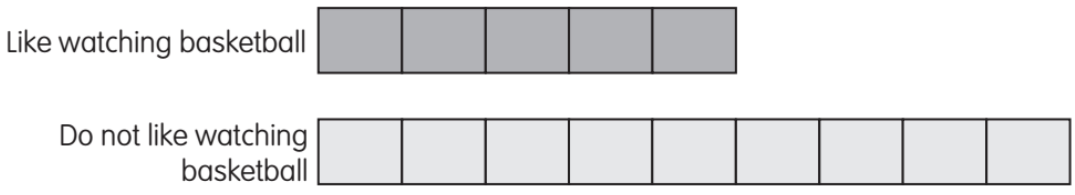
61)



62) Kayla collects 19 cards and Tyler collects 31 cards.



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



Solve.

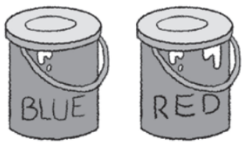
64) There are 94 apples in a box. 37 of them are red and the rest are green.

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?

65) 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.

66) 8 : 36

67) 12 : 52

State whether each pair of ratios are equivalent.

68) 12 : 27 and 4 : 9

69) 9 : 6 and 6 : 9

70) 8 : 36 and 4 : 18

Express each ratio in its simplest form.

71) $45 : 15$ 72) $32 : 64$ 73) $5\ hr : 52\ min$

Find the missing term of each pair of equivalent ratios.

74) $42 : 18 = \ ? \ : 3$ 75) $? \ : 24 = 7 : 6$

? = _____ ? = _____

Fill in the table.

76) 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.

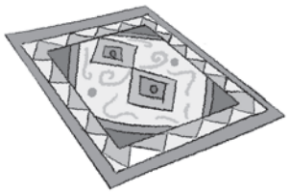
Mixture	A	B	C	D
Number of Cups of Orange Syrup	3	6	9	12
Number of Cups of Water	7	14	21	28
Orange Drink : Water	3 : 7			
Orange Drink : Water (Simplest Form)	3 : 7			
$\frac{Number\ of\ Cups\ of\ Orange\ Drink}{Number\ of\ Cups\ of\ Water}$	$\frac{3}{7}$			

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

Section 4.3: Real-World Problems: Ratios

Solve.

77) 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.

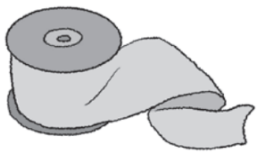


78) Kyle and Claire bought a present and shared the cost in the ratio $3 : 8$. Claire paid $\$15$ more than Kyle. Find the total cost of the present. Draw a bar model to solve this problem.



79) 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.

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

Section 5.2: Real-World Problems: Rates and Unit Rates

81) The table below shows the parking fees for a park.

From $9{:}00\ AM$ **to** $5{:}00\ PM$	$\$5.50$ per hour
After $5{:}00\ PM$	$\$7.00$ per hour

Ms. Jones parked at the park from $4{:}00\ PM$ to $9{:}00\ PM$. How much did she pay for the parking fees?

82) 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

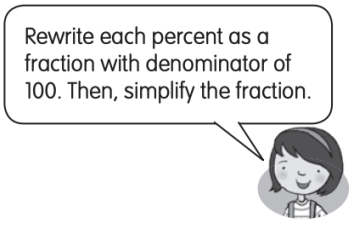
Section 6.1: Understanding Percent

Solve.

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

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

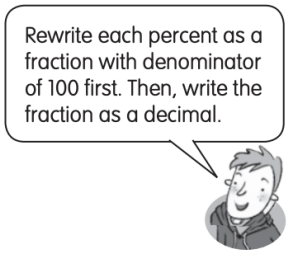
Express each percent as a fraction or a mixed number in simplest form.



85) 86%

86) 675%

Express each percent as a decimal.

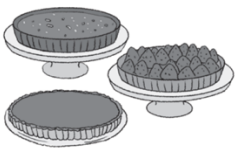


87) 7%

88) 367%

Solve.

89) 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.

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

91) $5\frac{3}{10}$

92) $3\frac{3}{4}$

Express each decimal as a percent.

93) 0.78

94) 6.25

95) 32.5

Express each percent as a fraction in simplest form.

96) 0.8%

97) 45.5%

98) $57\frac{2}{5}\%$

Solve.

99) 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?

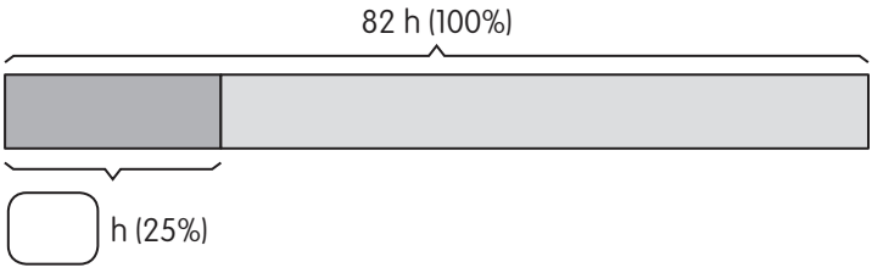
b. What percent of the students preferred the least favorite color?

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

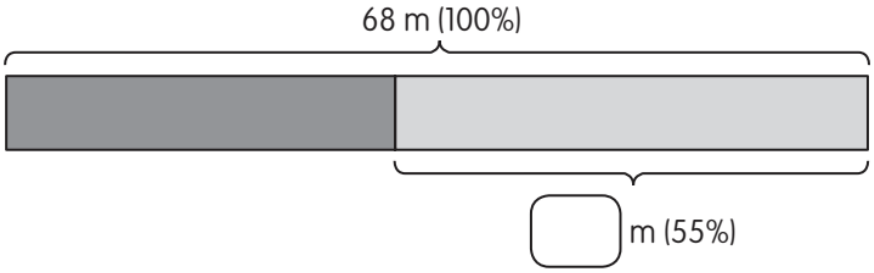
Section 6.3: Percent of a Quantity

Solve. Use the bar model to help you.

100) What is 25% of 82 hours?



101) 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.

102) 36% of 540 gallons

103) 110% of $610

Solve.

104) 15% of a number is 30. Find the number.

105) 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?



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