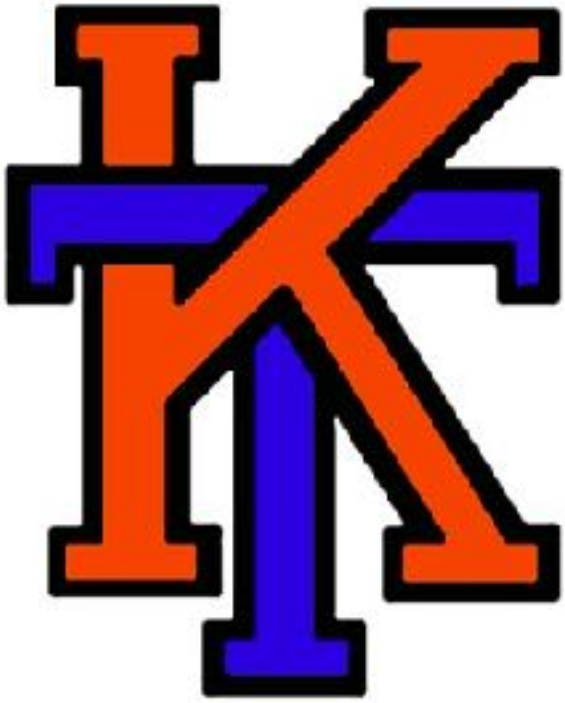
Keansburg Public Schools



Summer Mathematics Review of 7th Grade Standards for Students Entering 8th Grade

Name:_____

Teacher:_____

Keansburg School District Summer Course Work

Review for 8th Grade

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Expressions and Equations

Use properties of operations to generate equivalent expressions.

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Geometry

Draw, construct and describe geometrical figures and describe the relationships between them.

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability

Use random sampling to draw inferences about a population.

Draw informal comparative inferences about two populations.

Investigate chance processes and develop, use, and evaluate probability models.

Mathematical Practices

Make sense of problems and persevere in solving them. Reason abstractly and quantitatively.

Construct viable arguments and critique the reasoning of others. Model with mathematics.

Use appropriate tools strategically. Attend to precision.

Look for and make use of structure.

Look for and express regularity in repeated reasoning.

Reference Sheet

The sum of the measures of the interior angles of a triangle = 180°

Distance = rate × time

Simple Interest Formula: $A = P + Prt$ **Compound Interest Formula**: $A = P(1+r)^t$

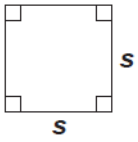
A = amount after t years; P = principal; r = annual interest rate; t = number of years

$\pi \approx 3.14$ or $\frac{22}{7}$

Square

Area = s^2

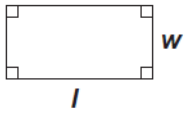
Perimeter = $4s$



Rectangle

Area = lw

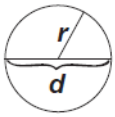
Perimeter = $2l + 2w$



Circle

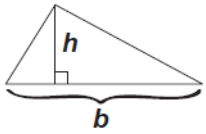
Area = πr^2

Circumference = $2\pi r$ = πd



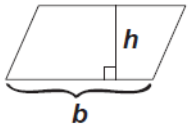
Triangle

Area = $\frac{1}{2}bh$



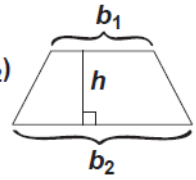
Parallelogram

Area = bh



Trapezoid

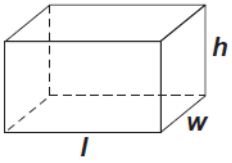
Area = $\frac{1}{2}h(b_1 + b_2)$



Rectangular Prism

Volume= lwh

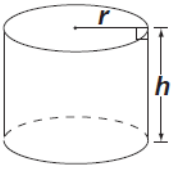
Surface Area= $2lw + 2wh + 2lh$



Cylinder

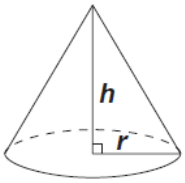
Volume = $\pi r^2 h$

Surface Area = $2\pi rh + 2\pi r^2$



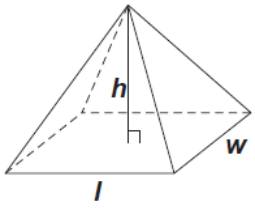
Cone

Volume = $\frac{1}{3}\pi r^2 h$



Pyramid

Volume = $\frac{1}{3}lwh$



USE THE FOLLOWING EQUIVALENTS FOR YOUR CALCULATIONS

60 seconds = 1 minute 60 minutes = 1 hour 24 hours = 1 day 7 days = 1 week 12 months = 1 year 365 days = 1 year	12 inches = 1 foot 3 feet = 1 yard 36 inches = 1 yard 5,280 feet = 1 mile 1,760 yards = 1 mile	10 millimeters = 1 centimeter 100 centimeters = 1 meter 10 decimeters = 1 meter 1000 meters = 1 kilometer
8 fluid ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon 1000 milliliters (mL) = 1 liter (L)	16 ounces = 1 pound 2,000 pounds = 1 ton 1000 milligrams = 1 gram 100 centigrams = 1 gram 10 grams = 1 dekagram 1000 grams = 1 kilogram	

8^{th} Grade Math Summer Packet

This packet is to be completed WITHOUT the use of a calculator. Show all work for each question in order to receive full credit.

1. Order the numbers from least to greatest.
   $0.04,\ \ 0.044,\ \ 0.0375,\ \ 0.0404,\ \ 0.1$

2. Subtract.
   $43.27 - 26.9$

3. Divide.
   $24.6 \div 0.4$

4. Add.
   $58.62 + 34.298$

5. Multiply.
   0.47×0.09

6. What is the place value of the 7 in the number 914.5837?

7. Add.
   $\frac{1}{4} + \frac{3}{5}$

8. Subtract.
$\frac{14}{15} - \frac{2}{3}$

9. Multiply.
$\frac{6}{7} \times \frac{5}{8}$

10. Divide.
$\frac{5}{7} \div \frac{5}{21}$

11. Add.
$8\frac{2}{5} + 3\frac{4}{7}$

12. Subtract.
$7\frac{1}{4} - 2\frac{1}{2}$

13. Multiply.
$8\frac{2}{3} \times 4\frac{5}{6}$

14. Divide.
$5\frac{3}{5} \div 2\frac{4}{10}$

15. Evaluate $x + 32$, when $x = 25$.

16. Evaluate $w \div 15$, when $w = -75$.

17. Find the unit rate: 308 meters in 11 seconds

18. The table below shows the amount Margret earns babysitting. How much does she make in 8 hours?

Earnings ($)	12	18	24
Time (h)	2	3	4

19. Kelly can type 496 words in 8 minutes. How many words per minute can she type?

20. The O'Brien family went on vacation and used 15.2 gallons of gasoline to travel 380 miles. How many gallons of gas would they need to travel 500 miles?

21. What is 35% of 60?

22. Kathryn made 75% of the 60 free throws she attempted. How many free throws did she make? How many did she miss?

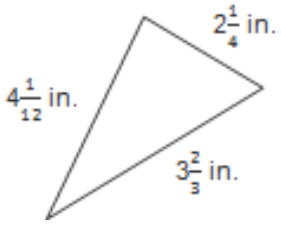
23. 35% of what number is 42?

24. What is the value of $|-14| + |5|$?

25. The average daytime temperature on Venus is 870˚F. The average temperature on Jupiter is -160˚F. What is the difference in the temperatures?

26. What is $2\frac{4}{9}$ expressed as a decimal?

27. What is the perimeter of this triangle?



28. Add $(-2x + 6) + (3x - 11) + 4$

29. Simplify $2x + 4 - x + 2 + 4x$

30. What is the value of $4b + 7a$ if $a = -3$ and $b = 5$?

31. Edgar's mother is 59 years old. Her age is five years more than twice Edgar's age. How old is Edgar?

32. Solve for the variable:

$$t + 14 = 23$$

33. Solve for the variable:

$$\frac{r}{16} = 4$$

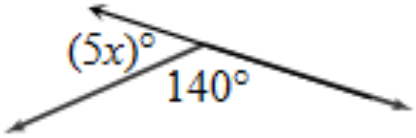
34. Solve for the variable:

$$5k = 250$$

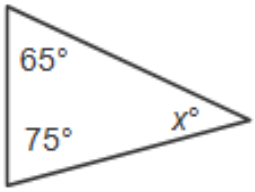
35. Solve for the variable:

$$s - 29 = 51$$

36. What is the value of x in the figure below?

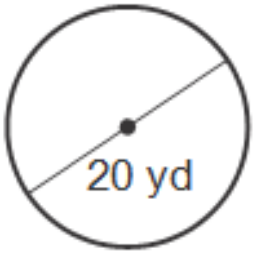


37. What is the value of x in the triangle below?

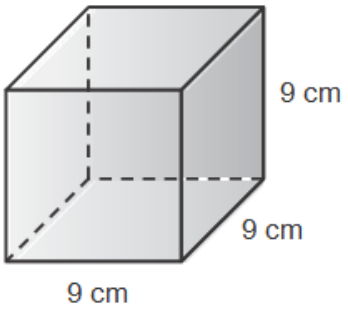


38. What is the classification of this triangle by its sides and by its angles?

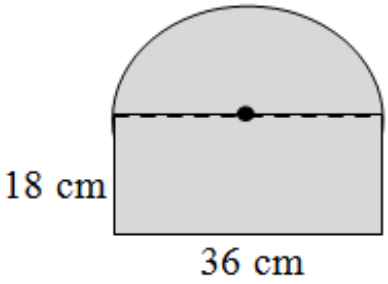
39. What is the area and circumference of the circle below? Use 3.14 for π.



40. What is the surface area of the cube? Use 2lw +2lh +2wh.

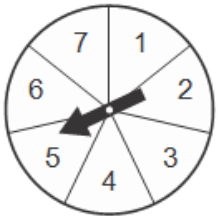


41. What is the area of the figure below? Use 3.14 for π. Round your answer to the nearest hundredth if necessary.



42. What is the probability of getting a number greater than three on one roll of a number cube?

43. What is the probability of spinning the spinner shown and getting a 7?

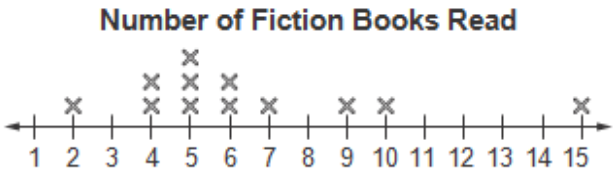


44. Using the spinner from the previous question, what is the probability of spinning a 7 two times in a row?

45. A bag contains 3 red, 4 blue, 3 green, and 5 yellow marbles. What is the probability of picking two green marbles in a row, without replacing the first marble?

46. A survey found that 5 out of 6 people in a given town visit a dentist on a regular basis. If there are 4,554 people in the town, what is reasonable prediction for the number of people who visit a dentist on a regular basis?

47. What is the median of the data set below?



48. If you were given the data set \$8, \$10, \$10, \$12, \$13, \$15, which measure of central tendency (mean, median, or mode) would you use to show that the prices are low? Explain your answer.

49. What type of graph would you use to show the price of gasoline over the last 12 months? Bar graph, circle graph, line graph, box and whisker plot? Explain your answer.

50. A survey showed that five out of every seven students in 8^{th} grade do their homework every night. How many students do their homework every night if there are 91 students in the eighth grade?

51. $-5 + 14 =$

52. $-16 - 4 =$

53. $35 - (-8) =$

54. $42 + (-3) =$

55. $-67 - (-2) =$