Summer Math Learning Packet - Students Entering 7th Grade

Discover mathematics all around you this summer! Just as with reading, regular practice over the summer with problem solving, computation, and math facts will maintain and strengthen the mathematical gains you made over the year.

Attached to this letter, you will find creative mathematics activities to explore at home. The goal is for you to have fun thinking and working collaboratively to communicate mathematical ideas. While you are wokiring, ask how the solution was found and why a particular strategy or "tool" was chosen.

The Summer Math Learning Packet consists of a calendar for July and a calendar for August. There are also literature and website recommendations for other optional ways for you to explore math over the summer.

DIRECTIONS: Do your best to complete the daily math problem/activity. Record your work in a math journal every day (see example below). Please return the calendar and journal the first week of school to get credit for all of your hard work!
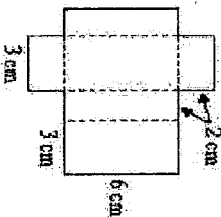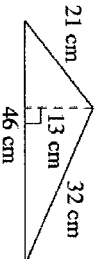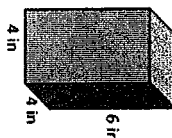
Each journal entry should:
- Have the date
- Have a clear and complete answer for the calendar math problem

Here is an example of a journal entry:

July 23rd

$8^2 = 64$ $10^2 = 100$ $11^2 = 121$

8×8 10×10 11×11

July 24th

$3(x+2) - 9 = 60$

$3x + 6 - 9 = 60$

$3x - 3 = 60$

$+3 \quad +3$

$\dfrac{3x}{3} = \dfrac{63}{3}$

$x = 21$

Summer Math Calendar for Students Entering 7th Grade – July

1. Let's factor!

Find the factors of 60:

Find the factors of 45:

Name the GCF: (greatest common factor)

2. Solve:

$$\left(6\frac{1}{8} + \frac{2}{3}\right) - 3\frac{11}{12}$$

Hint: Find common denominators

3. Fill in the missing number.

$56.7 + 0.89 - \underline{\quad} = 1.29$

Write your answer in word form.

4. 545 is halfway between 350 and what number?

5. Use the order of operations to simplify:

$3^2 + 5 \cdot 8 \div 10$

$(6*3) + 32 \div 8 - 5 + 4^3$

6. Find four fractions between

$\frac{1}{10}$ and $\frac{1}{8}$

Hint: Find common denominators and rename the fractions

7. If three pies require 2 dozen apples, then four pies require _____ dozen apples.

8. A jacket costs $75.00. It is on sale for 30% off. If you give the cashier $60.00, calculate the amount of money you should receive as change.

9. How many prime numbers are there between 0 and 75? What about between 76 and 150?

10. What is 25% of 80?

8 is what percent of 12?

11. Square the following numbers: 10, 7, 13, 6, 9, 12

12. Write the ratio of females to males in your household:

Write the ratio of humans to animals in your household:

Write the ratio of days of summer vacation to school days:

13. Find the area of a square with a perimeter measuring 120 cm.

What did you notice?

14. Divide:

$0.75 \div 0.5 =$

$\frac{3}{4} \div \frac{1}{2} =$

15. Evaluate the algebraic expressions if $x = 5.6$ and $y = 9.3$

$3x + 4y$

$5y - 4x$

16. Express the fraction $\frac{3}{4}$ and $\frac{17}{20}$ as a decimal and as a percent.

17. Find the products:

$\frac{1}{3} \times 21 =$

$2\frac{1}{4} \times 4 =$

18. Find the possible dimensions of a rectangle with an area measuring 120 sq cm. Are there other possible dimensions?

19. Distribute:

$2(x + y)$

$7(9 - c)$

20. Place parentheses in the following equation to make it true.

$6 + 6 \div 6 \times 6 - 6 = 0$

21. Look up the temperature for the last 7 days. What is the maximum? The minimum? The range? The mean? Is there a mode?

22. If you pull eight coins from your pocket, and none of them are pennies, what is the most money that you could have? The least?

23. Play a math thinking game like:

Yahtzee
Mastermind
Monopoly
Life
Tenzi
Battleship
Dominoes
Guess My Number

24. Find the surface area of the rectangular prism:

3 cm, 3 cm, 6 cm, 2 cm

25. Find the area:

21 cm, 13 cm, 32 cm, 46 cm

26. Robert's recipe has 5 onions & 9 tomatoes for the pizza. Jeff's recipe has 8 onions & 10 tomatoes for the pizza. Whose recipe has a lower ratio of onions to tomatoes? Explain.

27. Find the volume of the rectangular prism:

4 in, 4 in, 6 in

28. The local coffee shop charges $30 for an hour of internet service. How much is that per minute? How much would it cost to use for 90 minutes?

Summer Math Calendar for Students Entering 7th Grade – August

1. What is the opposite of:
-3
15
A decrease of 6 degrees
A gain of $600

2. Perform the operations:
$$\frac{1}{2} + \frac{5}{8} =$$
$$1\frac{1}{2} - \frac{5}{8} =$$
$$\frac{1}{2} \times \frac{5}{8} =$$

3. If the area of a rectangle equals 30 cm² and the perimeter is equal to 26 cm, what is the length and width of the rectangle?

4. What is the value of n in the inequality below?
$$\frac{3}{5} < \frac{n}{7} < \frac{4}{5}$$

5. Solve the equations:
$$a + 38 = 102$$
$$b - 38 = 95$$

6. Find two numbers that have 2, 5, and 7 as factors.

7. What is the area of a trapezoid with bases of 3 in. and 8 in. and a height of 3 in.?

8. At the store, or online, find 2 boxes or cans of similar food items and write down their size and price. At home, find the unit rate and determine which is a better buy.

9. Find the area and perimeter of a rectangle with length measuring 14 cm and width measuring 5 cm more than twice the length.

10. Solve the equations:
$$3b = 102$$
$$\frac{b}{21} = 8$$

10. Are these ratios equivalent?
9 pencils to 50 erasers
7 pencils to 49 erasers
If not, how many would you add or take away from one to make them the same?

12. Combine like terms to simplify:
$$m + m + m + m + m$$
$$x + x + y + z + y$$

13. Perform the operations:
$$\frac{3}{5} - \frac{3}{10} =$$
$$\frac{1}{2} \times 5 =$$
$$2 \div \frac{1}{2} =$$

14. Simplify using order of operations:
$$72 \div 3 - 5(2.8) + 9$$
$$3 * 14(10 - 8) - 60$$

15. Without parentheses the expression
$$8 + 30 \div 2 + 4$$
equals 27. Place parentheses in the expression so it equals 13, then 23.

16. GCF (17, 34) =
GCF (45, 60) =
LCM (12, 15) =
LCM (17, 34) =

17. Susan has a weight of 87.5 pounds. Adam is 4.3 pounds heavier than Susan, and James is 2.9 pounds lighter than Susan. What are the weights of Adam and James?

18. Find each quotient:

$$0.09\overline{)0.108}$$

$$0.4 \div 0.02 =$$

19. It costs $12 to attend a golf clinic with a local pro. Buckets of balls for practice during the clinic cost $3 each. How many buckets can you buy if you have $30 to spend?

20. Find the products:
$$\frac{2}{3} \times \frac{3}{4} =$$
$$7(9 - c)$$
$$\frac{3}{5} \times \frac{3}{10} =$$

21. Distribute:
$$2(x + y)$$

22. Solve the equation:
$$c + 54 = 281$$
$$6c = 102$$

23. Perform the operations:
$$25.03 + 61.9 =$$
$$85 - 48.25 =$$
$$9 \times 3.78 =$$
$$9 \div 2.5 =$$

24. The perimeter of a rectangle is 72 m. The width of the rectangle is 16 m. What is the area of the rectangle?

25. The sum of three decimal amounts is 450.63. What is the third decimal amount, if two of them are 126.53 and 95.54?

26. You're heading to the beach. If the car travels at a constant speed of 60 mph and it takes 2.5 hours to get there, how far away is the beach? How long will it take you if the car travels at 50 mph?

27. Distribute:
$$3(8a + 9b)$$
$$\tfrac{1}{2}(10x + 20y)$$

28. Play a math thinking game like:
Yahtzee
Mastermind
Monopoly
Life
Tenzi
Battleship
Dominoes
Guess My Number

Additional Math Activities

Fun math books to read

Anno's Magic Seeds by Anno, Mistumasa
Math Curse by Jon Scieszka
The Greedy Triangle by Marilyn Burns
Guinness Book of Records by Time Inc
The King's Chessboard by Birch, David
Less Than Nothing is Really Something by Froman, Robert
Mathematicians are People Too by Luetta Reimer & Wilbert Reimer
Sea Squares by Joy Hulme

Fun websites to explore

www.aplusmath.com
https://www.funbrain.com/math-zone
http://www.setgame.com/
http://calculationnation.nctm.org/
http://www.ck12.org/summer/?summerLeaning=true
http://figurethis.nctm.org/index.html
www.prodigygame.com math practice
https://www.mathcounts.org/resources/problem-of-the-week
http://www.kenkenpuzzle.com/
https://mathszone.co.uk/resources/grid/ooodle/ (math wordle)

Additional Math Puzzles to Solve:

HOW TO PLAY KENKEN®

1. Fill in each square with a single number. In a 3x3 grid, use the numbers 1 through 3. In a 4x4 grid, use the numbers 1 through 4. In a 5x5 grid, use the numbers 1 through 5...and so on.
2. Do not repeat numbers in any individual row or column. For example, in a 3x3 grid, each column and each row should be filled in with the numbers 1, 2, and 3, with no duplication.
3. Each heavily outlined set of squares is called a "cage." The numbers in each cage must combine (in any order) to produce the target number indicated in the top corner by using the mathematical operation next to the target number.
4. A number may be repeated within a cage as long as it is not in the same row or column.

HINTS

1. First fill in single box cages, called "freebies," with the number in the top left corner.
2. Note the candidates (all possible numbers for each square) for each remaining square and then determine the correct numbers by math, logic, and process of elimination.
3. Each puzzle has one unique solution.

27-7
www.kenkenpuzzle.com

27-8
www.kenken.com

27-13
www.kenken.com

27-14
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