


SUMMER MATH PACKET FOR STUDENTS RISING TO 8TH GRADE

Directions: Complete the following problems without the use of a calculator, unless the problem is accompanied by a calculator icon: .

Provided by COX MATH TUTORING

1. Find each difference.

$$1.1. \quad (-6) - 8 = -14$$

$$1.2. \quad 4 - (-2) = 6$$

$$1.3. \quad (-1) - 7 = -8$$

$$1.4. \quad 8 - 1 = 7$$

$$1.5. \quad (-6) - 4 = -10$$

$$1.6. \quad 2 - 8 = -6$$

$$1.7. \quad 0 - (-4) = 4$$

$$1.8. \quad (-8) - 1 = -9$$

$$1.9. \quad (-1) - (-4) = 3$$

$$1.10. \quad 7 - (-3) = 10$$

2. Evaluate each expression.

$$2.1. \quad 8 - 2 + (-2) = 4$$

$$2.2. \quad 3 - 8 + (-4) = -9$$

$$2.3. \quad (-8) - (-2) - (-4) = -2$$

$$2.4. \quad (-4) + (-2) - 6 = -12$$

$$2.5. \quad 3 + 5 + (-5) = 3$$

$$2.6. \quad 1 + 0 - (-6) = 7$$

$$2.7. \quad 1 + (-1) + 4 = 4$$

$$2.8. \quad 2 + (-1) - (-7) = 8$$

$$2.9. \quad (-5) - 4 + (-5) = -14$$

$$2.10. \quad 3 - (-7) + (-3) = 4$$

3. Find each quotient

$$3.1. \quad \frac{80}{-8} = -10$$

$$3.2. \quad \frac{21}{3} = 7$$

$$3.3. \quad \frac{-60}{-6} = 10$$

$$3.4. \quad \frac{49}{7} = 7$$

$$3.5. \quad \frac{-36}{-4} = 9$$

$$3.6. \quad \frac{-56}{-8} = 7$$

$$3.7. \quad \frac{8}{-1} = -8$$

$$3.8. \quad \frac{-40}{4} = -10$$

$$3.9. \quad \frac{-28}{-4} = 7$$

$$3.10. \quad \frac{5}{-1} = -5$$

4. Find each product

$$4.1. \quad (-5)(-10)(-4) = -200$$

$$4.2. \quad (-5)(-4)(-5) = -100$$

$$4.3. \quad (-7)(4)(3) = -84$$

$$4.4. \quad (-5)(-5)(10) = 250$$

$$4.5. \quad (-9)(-7)(6) = 378$$

$$4.6. \quad (-9)(10)(-8) = 720$$

$$4.7. \quad (10)(-9)(-3) = 270$$

$$4.8. \quad (-9)(3)(10) = -270$$

$$4.9. \quad (-2)(8)(-7) = 112$$

$$4.10. \quad (3)(6)(-1) = -18$$

5. Number sense.

5.1. List all perfect squares between 1 and 250.

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225

5.2. What is the smallest prime number? The smallest composite number?

2

4

5.3. List 4 factors of 24. List 4 multiples of 24.

2, 4, 6, 8

24, 48, 72, 96

5.4. Are both 7 and $\frac{1}{2}$ integers? Why or why not?

No. 7 is an integer. $\frac{1}{2}$ is NOT.

5.5. Round 43.77301 to the nearest hundredths.

43.77

6. Simplify each expression

6.1. $5n + 5n$

$10n$

6.10. $-3v + 10 + v + 7$

$-2v + 17$

6.2. $-6 + 9r + 8$

$9r + 2$

6.11. $-4(-5x + 3)$

$20x - 12$

6.3. $k + 10 + 8 + 8k$

$9k + 18$

6.12. $7(r + 4)$

$7r + 28$

6.4. $3n + n$

$4n$

6.13. $-3(x - 5)$

$-3x + 15$

6.5. $3a - 2a$

a

6.14. $-10(x - 10)$

$-10x + 10$

6.6. $4 + 2n + 8$

$2n + 12$

6.15. $-(8x - 3)$

$-8x + 3$

6.7. $-8m + 10 + 9m$

$m + 10$

6.16. $2x + 7(x + 4)$

$9x + 28$

6.8. $5 + 6v + 1 - 4v$

$2v + 6$

6.17. $-7(4x + 1) - 7$

$-28x - 14$

6.9. $2 + 9x + 2 - 8x$

$x + 4$

6.18. $-4(9k - 2) + k$

$-35k + 8$

6.19. $5 + 10(10v + 9)$

$$100v + 95$$

6.20. $-(-2k + 10) + 8$

$$2k - 2$$

6.21. $-5(x - 7) + 5$

$$40 - 5x$$

6.22. $-9x - 9(2x + 10)$

$$-27x - 90$$

7. Solve each equation.

7.1. $-1 = \frac{1+v}{6}$

$$v = -7$$

7.6. $\frac{v-2}{9} = 1$

$$v = 11$$

7.2. $-p - 10 = 0$

$$p = -10$$

7.7. $-6 + \frac{x}{-1} = 6$

$$x = -12$$

7.3. $\frac{n}{6} - 6 = -7$

$$n = -6$$

7.8. $-10 - 7n = 88$

$$n = -14$$

7.4. $\frac{x+7}{1} = 0$

$$x = -7$$

7.9. $42 = -8n + 10$

$$n = -4$$

7.5. $-5 + 3k = 40$

$$k = 15$$

7.10. $154 = 4 + 10x$

$$x = 15$$

- 7.11. Gabriella had some candy to give to her three children. She first took two pieces for herself and then evenly divided the rest among her children. Each child received five pieces. With how many pieces did she start?

$s =$ starting # candy

$$x - 2 - 3 \cdot 5 = 0$$

$$\begin{array}{r} x - 17 = 0 \\ +17 \quad +17 \\ \hline x = 17 \end{array}$$

- 7.12. Beth won 82 pieces of gum playing hoops at the county fair. At school she gave four to every student in her math class. She only has 2 remaining. How many students are in her class?

$x = \#$ students in her class

$$82 - 4 \cdot x = 2$$

$$x = 20$$

- 7.13. Ming spent half of her weekly allowance buying pizza. To earn more money her parents let mow the lawn for \$4. What is her weekly allowance if she ended with \$14?

$x =$ her weekly allowance

$$x - \frac{1}{2} \cdot x + 4 = 14$$

$$x = \$20$$

- 7.14. Eduardo won 57 super bouncy balls playing the ring-toss at the county fair. At school he gave two to every student in his math class. He only has 5 remaining. How many students are in his class?

$x = \#$ students in his class

$$57 - 2 \cdot x = 5$$

$$x = 26$$

- 7.15. You had \$25 to spend on two avocados. After buying them you had \$21. How much did each avocado cost?

$x =$ cost of avocado

$$25 - 2x = 21$$

$$x = \$2$$

- 7.16. On Tuesday Julia bought six posters. On Wednesday half of all the posters that she had were destroyed. On Thursday there were only 16 left. How many did she have on Monday?

$x = \#$ posters on Mon

$$(x + 6) - \frac{1}{2}(x + 6) = 16$$

$$x = 26$$

8. Solve each proportion.

8.1. $\frac{n}{3} = \frac{7}{2}$

$2n = 21$ $n = \frac{21}{2}$

8.2. $\frac{7}{3} = \frac{2}{n}$

$7n = 6$ $n = \frac{6}{7}$

8.3. $\frac{6}{x} = \frac{8}{3}$

$8x = 18$ $x = \frac{18}{8} = \frac{9}{4}$

8.4. $\frac{9}{6} = \frac{8}{x}$

$9x = 48$ $x = \frac{48}{9} = \frac{16}{3}$

8.5. $\frac{5}{9} = \frac{n}{4}$

$20 = 9n$ $n = \frac{20}{9}$

8.6. $\frac{5}{7} = \frac{6a}{3}$

$42a = 15$
 $a = \frac{15}{42} = \frac{5}{14}$

8.7. $\frac{6}{4} = \frac{p}{5}$

$4p = 30$ $p = \frac{30}{4} = \frac{15}{2}$

8.8. $\frac{n}{8} = \frac{8}{2}$

$2n = 64$ $n = 32$

8.9. $\frac{5}{10} = \frac{2}{k}$

$20 = 5k$ $k = 4$

8.10. $\frac{6}{10} = \frac{a}{5}$

$30 = 10a$ $a = \frac{30}{10} = 3$

9. Set up a ratio and solve.

9.1. The ratio of the cost of a tennis racquet to tennis balls is 18:1. If a can of balls cost \$5.35, what is the cost of the racquet?

$\frac{18}{1} = \frac{x}{5.35}$ $x = 18(5.35) = 96.3$

9.2. County School has 1,575 students. The student to teacher ratio is 15 to 1. How many teachers are at County School?

$\frac{1575 \text{ students}}{x \text{ teachers}} = \frac{15}{1}$

$\frac{15x}{15} = \frac{1575}{15}$
 $x = 105$

- 9.3. A recipe calls for $2\frac{1}{2}$ cups of flour to make 2 dozen cookies. How many cups of flour would be required to bake 15 dozen?

$$\frac{2\frac{1}{2}}{2} = \frac{x}{15}$$
$$2x = 15\left(\frac{5}{2}\right) = \frac{75}{2}$$
$$x = \frac{75}{4} = 18\frac{3}{4} \text{ cups}$$

- 9.4. If a 4 pound roast takes 150 minutes to cook, how long should a 5 pound roast take?

10. Percents

- 10.1. 48 is what percent of 642?

$$\frac{48}{642} = .074 \quad 7.4\%$$

- 10.2. 110% of 124 is what number?

$$124(1.10) = 136.4$$

- 10.3. What is 45% of 580?

$$580(.45) = 261$$

- 10.4. What percent of 160 is 62?

$$\frac{62}{160} = 6.2$$