

Pre-Algebra Regular Summer Review Packet

Compute. Use order of operations. Show all work!

- | | | |
|-------------------------------------|--|--------------------------------|
| 1. $36 - 4 + \sqrt{25}$ | 2. $8(3 + 7) - 5$ | 3. $7(6) - 40 \div 5$ |
| 4. $15 + 18 \div 3^2 - 6$ | 5. $\sqrt{36} \div (15 - 9) 4$ | 6. $(8 - 3)^2 \cdot (14 - 8)$ |
| 7. $\frac{(12 - 5) \cdot 6}{7 - 4}$ | 8. $\frac{80 \div (6 - 2)}{35 \div 7}$ | 9. $2^4 + [5^2 - (13 + 7)]$ |
| 10. $40 - 2(15)$ | 11. $6(8 - 4) + 5$ | 12. $9(4) - 24 \div \sqrt{16}$ |
| 13. $15 - 2(3)$ | 14. $98 - (36 + 15)$ | 15. $(98 - 36) + 15$ |
| 16. $17 + 3(4 + 2)$ | 17. $38 - 5(3 + 4)$ | 18. $5(8 + 4) - 12 $ |
| 19. $7(1 + 9) - 44$ | 20. $(24 - 9) - (1 + 3)$ | 21. $(50 + 16) - (17 - 6)$ |
| 22. $\frac{8 + 7}{7 - 2}$ | 23. $\frac{40}{4(2)}$ | 24. $\frac{4(3)}{14 - 4}$ |
| 25. $\frac{6(8 - 3)}{2}$ | 26. $\frac{8}{2} + \sqrt{121}$ | 27. $\frac{9}{3} - 1$ |
| 28. $ -7 + \frac{18}{3(3)}$ | 29. $\frac{9(2)}{6} + 4$ | 30. $12 - \frac{8(5)}{4}$ |

Use grouping symbols to make each statement true.

- | | |
|-------------------------------------|-------------------------------|
| 31. $25 - 8 \cdot 3 = 51$ | 32. $9 + 4 \cdot 5 - 3 = 17$ |
| 33. $9 + 9 \div 3 \cdot 5 - 3 = 12$ | 34. $6 \cdot 5 - 5^2 + 2 = 3$ |

Write as an algebraic expression.

- | | |
|---|---|
| 1. 7 less than 4 times a number
_____ | 2. 11 more than half a number
_____ |
| 3. 6 less than twice w
_____ | 4. the sum of triple z and half of x
_____ |
| 5. 5 more than the product of 14 and y
_____ | 6. $\frac{1}{2}$ the difference of a number and 15
_____ |
| 7. double the sum of x and 5
_____ | 8. 4 less than the quotient of x and -5
_____ |

General Review

Write the place-value position for each digit in 48.092.

1. the 9 2. the 8 3. the 4 4. the 2

Replace each \bigcirc with $<$, $>$, or $=$ to make a true sentence.

5. 5,048 \bigcirc 5,084 6. 7.641 \bigcirc 7.6410

Add, subtract, multiply, or divide.

7.
$$\begin{array}{r} 2,068 \\ + 487 \\ \hline \end{array}$$
 8.
$$\begin{array}{r} 40,236 \\ + 14,890 \\ \hline \end{array}$$
 9.
$$\begin{array}{r} 584 \\ - 391 \\ \hline \end{array}$$
 10.
$$\begin{array}{r} 6,000 \\ - 3,109 \\ \hline \end{array}$$

11. $5.8 + 10.3 =$ 12. $4.39 + 21.6 + 0.934 =$

13. $4.10 - 2.684 =$ 14. $\$147.04 - \$76.38 =$

15.
$$\begin{array}{r} 807 \\ \times 6 \\ \hline \end{array}$$
 16.
$$\begin{array}{r} 57 \\ \times 63 \\ \hline \end{array}$$
 17.
$$\begin{array}{r} 9.07 \\ \times 12 \\ \hline \end{array}$$
 18.
$$\begin{array}{r} 12.015 \\ \times 0.14 \\ \hline \end{array}$$

9. $4\overline{)824}$ 20. $38\overline{)342}$ 21. $0.8\overline{)50.4}$ 22. $0.56\overline{)1.148}$

Find the greatest common factor for each set of numbers.

23. 32 and 48 24. 16, 24, and 72

Find the least common multiple for each set of numbers.

25. 33 and 39 26. 22, 44, and 55

Write each fraction in simplest form.

27. $\frac{10}{16} =$ 28. $\frac{15}{27} =$ 29. $\frac{12}{40} =$ 30. $\frac{28}{60} =$

Replace each \bigcirc with $<$, $>$, or $=$ to make a true sentence.

31. $\frac{7}{9} \bigcirc \frac{5}{6}$ 32. $\frac{10}{12} \bigcirc \frac{5}{6}$

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____
- 25. _____
- 26. _____
- 27. _____
- 28. _____
- 29. _____
- 30. _____
- 31. _____
- 32. _____

General Review

Add, subtract, multiply, or divide.
Write each result in simplest form.

33. $\frac{4}{11} + \frac{3}{11} =$

34. $\frac{7}{12} + \frac{1}{6} =$

35. $2\frac{8}{9} + 8\frac{2}{3} =$

36. $\frac{8}{17} - \frac{7}{17} =$

37. $\frac{2}{3} - \frac{7}{15} =$

38. $2\frac{5}{8} - 1\frac{5}{6} =$

39. $\frac{4}{5} \times \frac{1}{3} =$

40. $\frac{8}{15} \times \frac{3}{4} =$

41. $1\frac{7}{8} \times 3\frac{3}{5} =$

42. $\frac{1}{8} \div \frac{1}{3} =$

43. $\frac{3}{8} \div 6 =$

44. $5\frac{5}{8} \div 1\frac{7}{8} =$

Write each percent as a decimal and each decimal as a percent.

45. $6\% =$

46. $0.195 =$

Find the percent of each number.

47. 125% of 10

48. 6.8% of 500

Complete the following.

49. $420 \text{ min} = \square \text{ h}$

50. $5 \text{ ft} = \square \text{ in.}$

Solve.

51. A train traveled 671 miles one day and 869 miles the next. How many miles is this altogether?

52. A 28-story building has 32 rooms on each floor. How many rooms are in the building?

53. There are 6 buses and 282 passengers. How many are on a bus if each one carries the same number of passengers?

54. A television set is on sale at \$43.50 off the original price. Find the sale price if the original price is \$350.

55. A shirt is purchased for \$10.39. How much change is given from \$15?

56. The admission to a movie is \$3.50. What amount is collected for 136 admissions?

Find the mean for the following groups of numbers.

57. 63, 67, 60, 78, 74, 72

58. 41, 37, 25, 36, 31

- 33. _____
- 34. _____
- 35. _____
- 36. _____
- 37. _____
- 38. _____
- 39. _____
- 40. _____
- 41. _____
- 42. _____
- 43. _____
- 44. _____
- 45. _____
- 46. _____
- 47. _____
- 48. _____
- 49. _____
- 50. _____
- 51. _____
- 52. _____
- 53. _____
- 54. _____
- 55. _____
- 56. _____
- 57. _____
- 58. _____

Addition and Subtraction Equations

SP4

Solve each equation. Show algebra steps.

1. $z + 16 = 4$

2. $0 = m + 17$

3. $-3 = j + 5$

4. $h + 13 = 21$

5. $9 + g = -20$

6. $-7 + d = -26$

7. $a - 20 = -3$

8. $w - 18 = 7$

9. $t - 19 = 23$

10. $-9 = k - 11$

11. $-15 = n - 22$

12. $27 = x - 14$

13. $-8 + b = -5$

14. $t - 24 = 12$

15. $-28 + p = -3$

Write true or false. If false, explain why.

- 16) The only prime factors of 252 are 2, 3, and 7.
- 17) The GCF of 14 and 15 is 1.
- 18) The prime factorization of 63 is 3×21 .
- 19) The only prime factors of a power of 10 are 2 and 5.
- 20) The GCF of 27 and 45 is 3.
- 21) If the GCF of two numbers is 1, the numbers have no common factors.
- 22) Every multiple of 4 is a multiple of 16.

Solve. There are two numbers.

- 23) One number is 10. The unknown number is less than 10. The GCF of the numbers is 2. Their LCM is 30. What is the unknown number?



SP5

Use the distributive property to write an equivalent expression.

1. $5(5 + c)$ _____

2. $-8(y + 2)$ _____

3. $(m + 1)9$ _____

4. $-3(2a + 5)$ _____

5. $4(y + 3z)$ _____

6. $(2a + 3b)4$ _____

Combine like terms.

7. $17c + 6c$ _____

8. $3y + 7x + 5y$ _____

9. $3a + 16 + 9a + 2a$ _____

10. $5m + 11n + 11m + 5n$ _____

11. $4(x + 5) + 8x + 7$ _____

12. $36 - 72t + 4t$ _____

Scientific Notation

Write using standard notation.

13. 6.781×10^5 _____

14. 2.001×10^{-2} _____

15. 7.61×10^{-5} _____

16. 3.114×10^3 _____

Write using scientific notation.

17. 6,821,000 _____

18. 0.810001 _____

19. 0.00000671 _____

20. 2,631 _____

SP6**Multiplication and Division Equations**

Solve each equation. Show perfect algebra steps.

1. $-6y = -84$

2. $\frac{7}{8}t = 49$

3. $440 = 15a$

4. $-136 = -17k$

5. $126 = -21p$

6. $0.15c = 600$

7. $\frac{d}{-9} = 11$

8. $\frac{p}{8} = 4\frac{1}{4}$

9. $22 = \frac{g}{-32}$

10. $-2.1 = \frac{r}{14}$

11. $-15 = \frac{w}{-12}$

12. $\frac{z}{-18} = 18$

Write and solve an equation. Set up the variable first (let $x =$)

13. Joan's age is triple the age of her daughter. If Joan is 42 years old, how old is her daughter?
14. I have a secret number. Seven more than quadruple my number equals -5. What is my number?
15. Sam and three friends are splitting a pizza. If each person pays \$4.50, what was the cost of the pizza?

Fraction Practice

SP7

Show all work.

1. Replace each ? with $>$, $<$, or $=$.

a. $\frac{5}{9}$? $\frac{5}{11}$

b. $\frac{47}{48}$? $\frac{48}{49}$

c. $\frac{12}{25}$? $\frac{10}{12}$

d. $\frac{24}{25}$? $\frac{8}{9}$

e. $\frac{14}{25}$? $\frac{14}{27}$

f. $\frac{9}{16}$? $\frac{13}{18}$

2. Find each sum or difference. Write each answer in lowest terms.

a. $\frac{2}{3} - \frac{4}{9}$

b. $\frac{11}{12} - \frac{5}{8}$

c. $\frac{4}{15} + \frac{2}{3}$

d. $\frac{3}{8} + \frac{1}{6}$

e. $\frac{2}{3} - \frac{5}{11}$

f. $\frac{5}{12} + \frac{2}{9}$

3. Carl has a rock collection. Of the rocks, $\frac{3}{8}$ are quartz and $\frac{1}{3}$ are granite. What fraction of Carl's rocks are quartz or granite?

For use with Section 3

4. Find each sum or difference. Write each answer in lowest terms.

a. $3\frac{2}{3} + 1\frac{5}{9}$

b. $6\frac{2}{3} - 4\frac{2}{5}$

c. $48\frac{1}{3} - 26\frac{1}{2}$

d. $6\frac{3}{4} + 9\frac{5}{6}$

e. $6\frac{3}{4} - 2\frac{1}{2}$

f. $15 - 4\frac{7}{12}$

g. $78\frac{1}{2} - 24\frac{3}{4}$

h. $12\frac{1}{2} + 8\frac{7}{10}$

i. $18\frac{5}{6} - 4\frac{3}{5}$

5. Find each product. Write each answer in lowest terms.

a. $4 \cdot 2\frac{1}{6}$

b. $5 \cdot 2\frac{1}{4}$

c. $\frac{3}{4} \cdot \frac{8}{9}$

d. $\frac{5}{8} \cdot \frac{2}{5}$

e. $2\frac{3}{5} \cdot 1\frac{3}{8}$

f. $1\frac{3}{4} \cdot \frac{2}{3}$

6. Find each quotient. Write each answer in lowest terms.

a. $6 \div \frac{5}{6}$

b. $3\frac{1}{4} \div 1\frac{3}{4}$

c. $3 \div 1\frac{2}{7}$

d. $9 \div \frac{3}{8}$

e. $2\frac{5}{6} \div \frac{1}{3}$

f. $2\frac{4}{9} \div \frac{2}{3}$

7. Sonya has 9 yd of wrapping paper. She cuts the paper into pieces that are $\frac{2}{3}$ yd long. How many pieces does she have?

8. A recipe for rice pudding calls for $3\frac{3}{4}$ c milk. How much milk would you need to triple the original recipe?

Did You Hear About . . .

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16 ?



Solve each equation or problem and find your solution in the answer column.
Write the word next to the answer in the box containing the problem number.



Use algebra steps!

1 $5n + 4 = -26$

2 $-2a - 9 = 39$

3 $\frac{x}{4} - 1 = 7$

4 $\frac{m}{-5} + 13 = 20$

5 $-7y + 2 = -75$

6 $\frac{v}{3} - 10 = -14$

7 $-3 + 4p = -31$

8 $-\frac{w}{6} + 9 = 2$

9 $8 - 3x = 128$

10 $\frac{k}{-15} + 20 = 17$

11 $45 = 6d - 45$

12 $12 = \frac{n}{9} + 1$

13 Five more than twice a number is -13 . Find the number.

14 Twelve less than the quotient of a number and 7 is -2 . Find the number.

15 The sum of eight times a number and fifteen is seven. Find the number.

16 One fourth of a number, decreased by 10, is -50 . Find the number.

-9 • MARKET

42 • HE

-31 • UP

-12 • FEATHERS

-1 • GOING

-100 • PILLOWS

-6 • THE

45 • THAT

-7 • BECAUSE

-3 • DUCK

70 • WAS

32 • WHO

99 • STOCK

85 • SOFT

-35 • INVESTED

-40 • HEARD

-160 • DOWN

-24 • GUY

64 • HAD

15 • THE

11 • IN

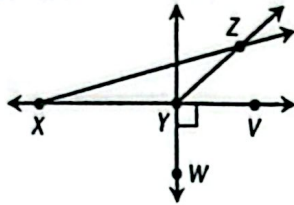


Mixed Review

SP9

Choose the best answer.

1. Which of the following statements is false?



- a. $\angle YXZ$ is obtuse.
- b. $\angle XYV$ is straight.
- c. $\angle ZYV$ is acute.
- d. $\angle WYV$ is right.

6. David wants to buy a \$1.25 sandwich and a \$0.95 soda for each of his n friends. Write an equation that models the relationship between his total cost C and n .

- a. $C = n + 1.25 + 0.95$
- b. $n = \frac{C}{1.25} + 0.95$
- c. $C = n(1.25 + 0.95)$
- d. $C = \frac{n(1.25)}{0.95}$

2. $\angle A$ and $\angle B$ are complementary. The measure of $\angle A$ is 20° . What is the measure of an angle that is supplementary to $\angle B$?

- a. 70°
- b. 110°
- c. 140°
- d. 160°

7. Evaluate $a^2 - b + 4$ when $a = 5$ and $b = -2$.

- a. 4
- b. 16
- c. 19
- d. 31

3. The deepest point in the world's oceans is 35,797 ft below sea level. Mt. Everest is 29,029 ft high. What is the difference between these two elevations?

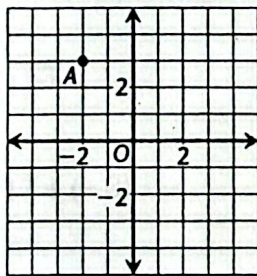
- a. 6668 ft
- b. 6768 ft
- c. 64,826 ft
- d. 65,716 ft

8. Write an equation that models this sentence:

Eight less than three times a number y equals x .

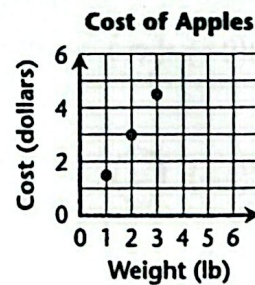
- a. $8 - 3y = x$
- b. $8(3 - y) = x$
- c. $3(x - 8) = y$
- d. $3y - 8 = x$

4. What are the coordinates of point A?



- a. $(-2, 3)$
- b. $(-2, -3)$
- c. $(3, -2)$
- d. $(-3, 2)$

9. Predict the cost of 5 lb of apples.



- a. \$6.50
- b. \$7.00
- c. \$7.50
- d. \$8.00

5. Evaluate $-14 - (18 - 21)$.

- a. -11
- b. -17
- c. -43
- d. -53

10. Solve $-24 = 6 - 3x$.

- a. -6
- b. -10
- c. 10
- d. 18

Integer PracticeEvaluate. Let $x = 6$, $y = -4$, and $z = 10$

1.) $x - y =$ _____

2.) $x^2 + y^2 =$ _____

3.) $xy + z =$ _____

4.) $3yz - 40 =$ _____

5.) $x^2 + x =$ _____

6.) $5z - y =$ _____

7.) $\frac{y+z}{x} =$ _____

8.) $\frac{xz}{y} =$ _____

Compute.

9.) $(-3)^2(-2)^3$

10.) $(-3)(-12)(-1)$

11.) $(-7)(5)(-4)$

12.) $\frac{-6 + (-3) + (-7)}{4}$

13.) $\frac{-60}{-3} + \frac{-48}{4}$

14.) $\frac{-9 \cdot 5}{3}$

15.) $-5 \cdot 2 \cdot 53$

16.) $-1(-6) + 8(-2)$

17.) $(-2)(-3) + (-1)(7)$

18.) $-8 + 17 + (-3)$

19.) $(-9)^2(-1)^5$

20.) $(-4)^3$

21.) $\frac{-72}{8} + \frac{-56}{7}$

22.) $(-8)(-1)(4)(-3)$

23.) $\frac{(-4)(-25)}{5}$

24.) $(-3 \cdot 7) + (-2 \cdot 4)$

25.) $\frac{9(-4)}{-2}$

26.) $\frac{-19 + (-11)}{6}$

27.) $\frac{170}{-10} + \frac{96}{12}$

28.) $\frac{-32}{2} + \frac{-75}{-15}$

29.) $80 + (-50) + (-70)$