

Directions: Show all work for full credit using a pencil. Circle your final answer.

This assignment is due the first day of school.

Use the summer assignment glossary to look up any words in which you need clarification.

Summer Assignment Glossary

Difference	The answer to a subtraction problem.
Equation	A statement in which two expressions are equivalent.
Expression	A collection of numbers, operations, variables, and grouping symbols.
Like Fraction	Fractions that have the same denominator.
Order of Operations	A procedure for evaluating an expression involving more than one operation. Please Excuse My Dear Aunt Sally P – Parenthesis E – Exponents M – Multiplication D – Division A – Addition S – Subtraction
Product	The answer to a multiplication problem.
Quotient	The answer to a division problem.
Sum	The answer to an addition problem.
Variable	A symbol, usually a letter that is used to represent one or more numbers in an algebraic expression.

ADDING AND SUBTRACTING DECIMALS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

$$\begin{array}{r} \text{Add.} \\ 33.200 \\ + 9.505 \\ + 4.000 \\ \hline 46.705 \end{array}$$

$$\begin{array}{r} \text{Subtract.} \\ 16.12 \\ - 15.70 \\ \hline 0.42 \end{array}$$

- Rewrite the problems vertically (up and down).
- Remember to line up the decimal points.
- Remember if the number is a whole number the decimal always starts to the right of the number (Example: 4 is written as 4.0 as a decimal)

Add or subtract.

1. $0.013 + 1.3 + 22$

2. $4.76 + 95.305 + 52.5$

3. $6.01 + 0.4401 + 41.7593$

4. $1.0001 + 2.032 + 0.9$

5. $6.03 - 0.962$

6. $7.13 - 1.875$

7. $87 - 0.003$

8. $962.3 - 15.677$

ROUNDING DECIMALS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

Round to the nearest hundredth: 47.926

$$47.\underline{9}26 \rightarrow 47.93$$

Find the place value to which you wish to round, and underline it. Look at the digit to the right of the underline. If the digit is right at 5 or greater than 5, add 1 to the underlined number. If the digit is less than 5, leave the underlined number unchanged.

Round to the nearest tenth.

9. 10.235

10. 8.56

Round to the nearest hundredth.

11. 1.2345

12. 26.5098

Round to the nearest thousandth.

13. 76.00983

14. 5.1477

Round to the nearest dollar.

15. \$34.56

16. \$127.49

ORDER OF OPERATIONS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

$$2^2 + (3+7) \cdot 5$$

$$2^2 + (10) \cdot 5$$

$$4 + (10 \cdot 5)$$

$$4 + 50$$

$$54$$

Order of Operations:

1. Parenthesis

2. Exponents

3. Multiply } left to right

4. Divide } left to right

5. Add

6. Subtract } left to right

Follow PEMDAS for order of operation problems. Remember you start by evaluating anything in parenthesis first. Then you evaluate anything with an exponent. Next, you do all multiplication and division left to right. Finally, add and subtract left to right.

Simplify.

17. $3^2 + 5 - 10$

18. $(6 + 9) \div 5 - 2$

19. $10 \div 2 \cdot 6 \div 3$

20. $2(7 - 5) + 3 \cdot 4$

21. $17 - 12 + 5$

22. $18 - 3^2 \div 9$

ADDING AND SUBTRACTING INTEGERS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

When adding two integers with the same sign, you add the numbers and keep the common sign.

$$(-5) + (-3) = -8 \quad 9 + 7 = 16$$

When adding two integers with different signs, subtract the numbers and write the sign of the integer that is further from zero (has the larger absolute value).

$$10 + (-3) = 7 \quad -8 + 4 = -4$$

Subtracting a negative number is the same thing as adding (minus a negative, plus a positive).

$$-3 - (-17) = -3 + 17 = 14 \quad 4 - (-15) = 4 + 15 = 19$$

Subtracting a positive number is the same thing as adding a negative number.

$$5 - 18 = 5 + (-18) = -13 \quad -3 - 8 = -3 + -8 = -11$$

Add or Subtract.

23. $(-7) + 1$

24. $(-15) + (-8)$

25. $107 + (-112)$

26. $24 + (-7) + 22$

27. $(-9) - 5$

28. $13 - (-5)$

29. $-17 - (-17)$

30. $24 - 30$

31. $-5 - (-25)$

32. $(-5) - 9 - 12$

MULTIPLYING AND DIVIDING INTEGERS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

Remember the products and quotients are positive if the two integers have the same sign. The products and quotients are negative if the integers have different signs.

$$(-7) \cdot (-9) = 63$$

$$64 \div (-4) = -16$$

$$(-2) \cdot 6 = -12$$

$$(-50) \div 5 = -10$$

33. $6 \cdot (-4)$

34. $(-6) \cdot (-10)$

35. $(-9) \cdot 8$

36. $7 \cdot 13$

37. $(-65) \div (-5)$

38. $100 \div (-20)$

39. $(-50) \div 25$

40. $(-60) \div (-4)$

ADDING AND SUBTRACTING FRACTIONS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

If there is a common denominator, add or subtract the numerators. The denominator will remain the same - do not add or subtract the denominator.

$$\frac{1}{7} + \frac{4}{7} = \frac{5}{7}$$

$$\frac{6}{11} - \frac{2}{11} = \frac{4}{11}$$

When the denominators are different, you must change the fractions to have the same denominator. To find the common denominator, find a number that both denominators can go in to. Multiply each fraction to get to that common denominator, then add or subtract as above.

$$\frac{1}{5} + \frac{2}{3} = \frac{3}{15} + \frac{10}{15} = \frac{13}{15}$$

5 & 3 go into 15

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

4 & 2 go into 4

Add or subtract.

41. $\frac{5}{4} - \frac{3}{4}$

42. $\frac{2}{5} + \frac{4}{5}$

43. $\frac{4}{3} + \frac{3}{2}$

44. $\frac{9}{5} - \frac{5}{8}$

45. $\frac{9}{5} - \frac{4}{3}$

46. $2 - \frac{13}{8}$

MULTIPLYING AND DIVIDING FRACTIONS

Show all work for full credit. A calculator is not permitted for these selected problems.

Examples:

When multiplying, multiply the numerators and multiply the denominators. Reduce.

$$\frac{2}{3} \cdot \frac{4}{5} = \frac{8}{15}$$

$$-\frac{5}{8} \cdot \frac{4}{7} = \frac{-20}{56} = \frac{-5}{14}$$

When dividing, take the reciprocal of the second fraction and change the division sign to multiplication. Reduce.

$$\frac{7}{15} \div \frac{3}{5} = \frac{7}{15} \cdot \frac{5}{3} = \frac{35}{45} = \frac{7}{9}$$

$$3 \div \frac{2}{3} = \frac{3}{1} \cdot \frac{3}{2} = \frac{9}{2}$$

Multiply or divide.

47. $\frac{2}{3} \cdot \frac{5}{4}$

48. $\frac{1}{2} \cdot \frac{2}{7}$

49. $\frac{4}{9} \cdot \frac{7}{4}$

50. $2 \cdot \frac{3}{7}$

51. $\frac{1}{5} \div \frac{7}{4}$

52. $\frac{1}{2} \div \frac{5}{4}$

53. $-\frac{3}{2} \div \frac{10}{7}$

54. $\frac{9}{5} \div 2$