

Objective: Using the order of operations.**Order of Operations:**

1. Perform any operations inside grouping symbols (parentheses.)
2. Simplify any term with exponents.
3. Multiply and divide in order **from left to right**.
4. Add and subtract in order **from left to right**.

Many students use PEMDAS to help them remember the order to perform operations.

Parentheses

Exponents

Multiply and

Divide

Add and

Subtract.

Simplify the following expressions.

_____ 1) $15 - 7 \cdot 3$

_____ 2) $7 * 8 - 5 + 6 \div 3$

_____ 3) $(3 - 7)4 - 12$

_____ 4) $12 \div 4 + 2 \cdot (-7) - 18 \div (-3)$

_____ 5) $4^2 - 2^4$

_____ 6) $6(5 + 12 \div 6)^2$

_____ 7) $\left(\frac{3}{4} + \frac{2}{3}\right) \cdot \frac{1}{2}$

_____ 8) $\frac{1}{6} + \left(\frac{2}{3}\right)^2$

_____ 9) $(49 - 10) \div (52/4)$

_____ 10) $-5 * 3^3$

_____ 11) $\frac{3}{4} \div \frac{2}{3} - \frac{3}{8}$

_____ 12) $\frac{7}{10} - \frac{4}{5} \div \left(\frac{2}{3} + \frac{2}{5}\right)$

_____ 13) $-6.2 + 0.72 \div 0.9$

_____ 14) $35 - 3(6 - 2)^3$

_____ 15) $28 \div 4 + 3$

_____ 16) $(7 + 2)(-3) + 9$

_____ 17) $18 \div \ominus - 15 \div 5 \frown$

Objective: Adding and subtracting with integers.

Review the following addition and subtraction rules.

- To add two numbers with the same sign, *add* their absolute values. The sum has the same sign as the numbers.
- To add two numbers with different signs, find the *difference* of their absolute values. The sum has the same sign as the number with the greater absolute value.
- Rewrite subtraction problems as addition problems by adding the opposite of the second value. To subtract a number, add its opposite. (Some students may be familiar with “add a line, change the sign.”)

_____ 1) $7 + (-2)$

_____ 13) $(-57) - (-43)$

_____ 2) $7 + (-11)$

_____ 14) $65 - (-335)$

_____ 3) $(-15) + (-15)$

_____ 15) $-175 - (-305)$

_____ 4) $36 + 12 + (-14)$

_____ 16) $(-99) + (-77) + (-1)$

_____ 5) $-8 + 15 + (-24) + 17$

_____ 17) $(-3) + 14 + (-7)$

_____ 6) $(-26) + (-44) + 14 + 36$

_____ 18) $8 - 56 + 12 - 4$

_____ 7) $(-56) + 24 + 43 + (-17)$

_____ 19) $8 + (-10) - (-7)$

_____ 8) $19 - 31$

_____ 20) $13 - 18 + 10 - 9$

_____ 9) $-24 - 0$

_____ 21) $-23 - (-7) + 5$

_____ 10) $14 - (-10)$

_____ 22) $13 + (-38) - (-42) - 17$

_____ 11) $-6 - (-3)$

_____ 23) $-32 + (-7) - (-40) + 6$

_____ 12) $(-8) - (-7)$

_____ 24) $4 + (-20) - 18 - (-13)$

Objective: Multiplying and dividing integers.

Review the following multiplication and division rules:

- The product or quotient of two positive numbers is positive.
- The product or quotient of two negative numbers is positive.
- The product or quotient of a negative number and a positive number is negative.

_____ 1) $-33 * 6$

_____ 14) $54 \div (-6)$

_____ 2) $(-14)(-6)$

_____ 15) $-84 \div 3$

_____ 3) $-39 * 61$

_____ 16) $-42 \div (-6)$

_____ 4) $(-5)(-11)$

_____ 17) $-169 \div (-13)$

_____ 5) $-15 * 0$

_____ 18) $121 \div (-11)$

_____ 6) $(-15)(15)$

_____ 19) $\frac{247}{-13}$

_____ 7) $(3)(-5)(2)$

_____ 8) $5 * (-3)(-8)$

_____ 20) $\frac{-60}{-15}$

_____ 9) $(-11)(-5)(-3)$

_____ 21) $\frac{-56}{-4}$

_____ 10) $(-9)(-4)(-5)$

_____ 22) $42 \div (-54)$

_____ 11) $(3)(-2)(6)(-4)$

_____ 23) $\frac{-1080}{40}$

_____ 12) $(-4)(6)(-5)(-6)$

_____ 13) $(-7)(-2)(-5)(-3)$

_____ 24) $\frac{0}{-22}$

Objective: Decimal Operations.

Review the rules for adding, subtracting, multiplying, and dividing integers. The same rules apply when adding, subtracting, multiplying, and dividing decimals. Remember to “line up the decimals” when adding and subtracting.

_____ 1) $-0.5 + 0.8$

_____ 12) $-1.2 \div 0.4$

_____ 2) $0.5 - 4$

_____ 13) $0.36 \div (-4)$

_____ 3) $0.27 - 3.06$

_____ 14) $0.12 \div (-0.4)$

_____ 4) $1.91 - (-3.08)$

_____ 15) $-0.36 \div (-0.9)$

_____ 5) $(-17.9) + (-3.9)$

_____ 16) $(0.3)(-84)$

_____ 6) $-1 + 0.4$

_____ 17) $-0.8 \overline{)33.2}$

_____ 7) $(-0.4)(47)$

_____ 18) $-0.3 \overline{)-4.05}$

_____ 8) $-9(0.06)$

_____ 19) $3 \overline{)-1.4}$

_____ 9) $(0.5)(-0.9)$

_____ 20) $8 \overline{)96}$

_____ 10) $(7.3)(-0.5)$

_____ 11) $(-0.1)(96)$

_____ 21) $\frac{-3.2}{-10}$

Objective: Fraction operations.

Review the rules for adding, subtracting, multiplying, and dividing integers. The same rules apply when adding, subtracting, multiplying, and dividing fractions.

- Find common denominators and equivalent fractions when adding and subtracting.
- Multiply the numerators and multiply the denominators when multiplying fractions. If either of the multipliers are mixed numbers, change them to improper fractions.
- To divide fractions: Find the reciprocal of the *second* fraction (divisor) and then multiply by the first fraction (dividend).
- Always simplify the answers.

For example:

$$\frac{14}{15} \div \frac{7}{5} =$$

$$\frac{14}{15} \cdot \frac{5}{7} = \frac{2}{3}$$

_____ 1) $\frac{1}{5} + \left(-\frac{4}{5}\right)$

_____ 10) $36\left(-\frac{5}{9}\right)$

_____ 2) $-\frac{5}{6} + \left(-\frac{5}{6}\right)$

_____ 11) $\left(-\frac{8}{15}\right)\left(\frac{27}{20}\right)\left(-\frac{5}{6}\right)$

_____ 3) $\frac{1}{3} - \frac{2}{3}$

_____ 12) $-12 \div \frac{2}{7}$

_____ 4) $\frac{3}{10} - \frac{1}{6}$

_____ 13) $\frac{4}{5} \div \left(-\frac{1}{20}\right)$

_____ 5) $2\frac{1}{2} + \left(-7\frac{1}{2}\right)$

_____ 14) $\left(-3\frac{1}{2}\right)\left(1\frac{3}{5}\right)$

_____ 6) $-5\frac{2}{7} + \left(-4\frac{3}{14}\right)$

_____ 15) $-\frac{1}{6}\left(-4\frac{4}{7}\right)$

_____ 7) $-13\frac{5}{9} - \left(-7\frac{2}{3}\right)$

_____ 16) $\left(4\frac{7}{8}\right)\left(-2\frac{2}{9}\right)$

_____ 8) $5\frac{1}{2} - \left(-2\frac{2}{3}\right)$

_____ 17) $2\left(\frac{2}{3}\right) + 3\left(\frac{1}{3}\right)$

_____ 9) $9\frac{2}{5} - 11\frac{1}{2}$

_____ 18) $\frac{3}{4} \left(3 - 33\right)$