

Pre-Algebra 25 Notes

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Evaluating Numerical Expressions: (1-4)

To Add integers, first check the signs:

1. If they are both **positive**, the sum is **positive**.

2. If they are both **negative**, the sum is **negative**.

3. If the signs are **different**:

a. Subtract their absolute values (the positive value of each).

b. Then look at the numbers we just subtracted - which is the larger one? What sign was it originally? This is the sign of the sum to the original problem.

To Subtract integers:

1. Convert the problem to addition by "*Adding the Opposite*" or Keep It, Change It, Change It. (KCC)

2. Then add like normal. (*See above*)

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To **Multiply/Divide** integers we start off by multiplying or dividing as usual, then apply the sign:

1. If *both* signs are **positive**, the product/quotient is **positive**.

2. If the signs are *different*. The product/quotient is **negative**.

Solving for the variable: (5-8)

These are *one-step* equations. We can solve them in "one" step by "doing the opposite" of the original equation.

1. **Adding** a number to x .

2. **Subtracting** a number from x .

3. **Multiplying** x by a number.

4. **Dividing** x by a number.

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Combining Like Terms (9-11):

You can only combine terms if they are "like" (if they have the same variable).

Solving For The Variable And Simplify. (12-13)

These are *two-step* equations. We can solve them in "two" steps by "doing the opposite" of the original equation.

1. First get rid of the constants the same way we did in "*one-step*" equations.

2. Then get rid of the coefficient the same way we did in "*one-step*" equations.

Simplify. (14)

This is the Distributive Property:

1. Multiply each term inside the parentheses by the term that is outside (touching) the parentheses.

2. Simplify your answer.

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Write Each Phrase As An Algebraic Expression or Equation. (15-16)

This means: translate into operations involving numbers and possibly variables.

1. Check to make sure your solution makes sense.
2. It does not say to solve these expressions. Just write them.

Solve. (17-18)

These are *Order Of Operations* problems.

1. Do operations in parentheses.
2. Evaluate the exponent(s).
3. Multiply or divide - whichever comes first reading the problem from left to right.
4. Add or subtract - whichever comes first reading the problem for left to right.

Evaluate Each Expression, if ... (19-20)

Substitute the given value of the variable into the original expression, then simplify.

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Solve. (21-22)

These are "multi-step" equations. These equations require *multiple* steps to arrive at a solution.

1. Combine all like terms

a. Put all variables on one side of the equation. (*Add The Opposite*)

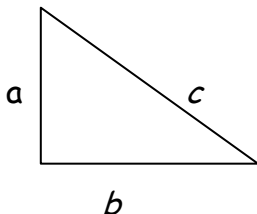
b. Put all the constants on the other side. (*Add The Opposite*)

2. Solve like it is a *one-step* equation.

Finding The Area/Perimeter of: ■ ■■■ ▲ (23-24)

To find the area of a square or rectangle, multiply the length and width of the object. Be sure to include the proper units. **Area is always a squared unit:** cm^2 , in.^2 , ft^2 , etc.. If there are no units, then use the generic term "units²" or "square units"

If the figure is a triangle, you can safely assume that it is a right triangle with the given dimensions. (Side a is equal to length and side b is equal to the width.)



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Find The Hypotenuse Of A Right Triangle. (25)

This problem involves The Pythagorean Theorem:

$$a^2 + b^2 = c^2$$

1. Add the squares of the two numbers.
2. Take the square root the sum.
3. If it is not a perfect square, leave under the radical (as is).

Always go back and check your work.

1. Did you simplify?
2. If the question asks you to solve for a variable, is that variable in your solution?
3. If the question has units, does your solution have the proper units?
4. Were you careful with your signs?