

Module E Homework Expectations

Below are examples of how work should be shown for the sections in this module. Follow the general *Homework Policy* guidelines. Write the problem statement before giving the solution. Show all supporting work and box your answers.

§11.1

Make sure you understand important vocabulary words (indicated by bold print in the textbook) such as **variable** and **expression**.

EXAMPLES:

#1 Write each of the following phrases using symbols. Use the variable x to represent “a number” in each problem.

5 more than a number $\boxed{5 + x}$ (Don't forget to box your answer)

#2 Identify which are expressions and which are not.

$4 + \div m$ $\boxed{\text{Not an expression}}$

§11.2

When *evaluating* expressions, substitute the given value for each variable. Show all work. Perform all calculations manually - do not use calculators.

EXAMPLES:

#1 Evaluate each expression if $x = -2.34$, $y = -3.14$, and $z = 4.12$. Round your answer to the nearest tenth.

$x + yz$	$\begin{array}{r} 3.14 \\ \times 4.12 \\ \hline 628 \\ 3140 \\ \hline 125600 \end{array}$	$\begin{array}{r} 12.9368 \\ + 2.34 \\ \hline 15.2768 \end{array}$
$= -2.34 + (-3.14)(4.12)$ (substitute the given value for each variable)	$\begin{array}{r} 628 \\ 3140 \\ \hline 125600 \end{array}$	
$= -2.34 - 12.9368$	12.9368 (show all scratch work on the side)	
$= -15.\underline{2}768$ (round to the nearest tenth - consider the digit to the right of the tenths place)		
$\approx \boxed{-15.3}$ (use the approximation symbol \approx after rounding)		

§11.2 (continued)

#2 Decide if the given values for the variable make the statement TRUE or FALSE.

$$3(x - y) = 6; x = 5, y = -3$$

$$3(5 - (-3)) = 6 \quad ? \quad \text{(Use question marks until the last statement is proven true or false)}$$

$$3(5 + 3) = 6 \quad ?$$

$$3(8) = 6 \quad ?$$

$$24 \neq 6$$

The given values do not make the statement true.
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(Clearly state the answer to the problem)

§11.3 Make sure you understand important vocabulary words (written in bold print in your book) such as **terms**, **like terms**, **factors**, and **numerical coefficients**.

EXAMPLES:

#1 List the terms of the following expressions.

$$7a + (-4b)$$

$7a, -4b$

(Separate each item in a list with a comma)

#2 Find the sum of $5a^4$ and $8a^4$.

$$5a^4 + 8a^4 =$$

$13a^4$

§11.4, §11.5, §11.6

Make sure you understand the difference between solving an equation and simplifying an expression. Review any vocabulary words in bold print within these sections.

When solving an equation, use either of two formats. Show all work clearly and align the equal signs vertically.

Horizontal Format

$$5x - 7 = 4x - 3$$

$$5x - 7 - 4x = 4x - 3 - 4x$$

$$x - 7 = -3$$

$$x - 7 + 7 = -3 + 7$$

$$\boxed{x = 4}$$

Vertical Format

$$5x - 7 = 4x - 3$$

$$\begin{array}{r} -4x \quad -4x \\ \hline \end{array}$$

$$x - 7 = -3$$

$$+ 7 = + 7$$

$$\boxed{x = 4}$$

To verify the solution, replace the variable with the solution value in the original equation using either of two methods:

Method 1:

Use the question mark (?) over the equal sign when simplifying expressions on both sides of the equation until the left and right sides of the equation are equal.

$$5x - 7 = 4x - 3$$

$$5(\mathbf{4}) - 7 = 4(\mathbf{4}) - 3$$

$$20 - 7 = 16 - 3$$

$$13 = 13 \quad \checkmark$$

Method 2:

Simplifying expressions on both sides of the equation separately in two distinct columns until the left and right sides of the equation are equal

$$\begin{array}{r} 5x - 7 \\ \hline \end{array} \qquad \begin{array}{r} 4x - 3 \\ \hline \end{array}$$

$$= 5(\mathbf{4}) - 7 \qquad = 4(\mathbf{4}) - 3$$

$$= 20 - 7 \qquad = 16 - 3$$

$$= 13 \qquad = 13 \quad \checkmark$$

Note the left and right sides are equal in the final step of both methods. For Method 1, the question mark ? is no longer needed in the last step. The solution $x = 4$ has been verified using either of the two methods.