

MODULE E  
Topic: Translating Expressions

$$\text{○} + \text{□}$$

$$\text{○} - \text{□}$$

$$\text{○} \cdot \text{□}$$

$$\frac{\text{○}}{\text{□}}$$

the sum of ○ and □

the difference of ○ and □

the product of ○ and □

the quotient of ○ and □

Expression	Translation into words (use sum, difference, product or quotient)
$4x$	
$\frac{3}{m}$	
$x^3 - 9$	
$6 + 2x$	
$\frac{x+1}{2x}$	
$x^2(x+4)$	
$2 - 3x$	
$5x + x^2$	
$\frac{x+2}{x-2}$	
	The difference of 4 and triple and number.
	The sum of four times a number and 3 less than the number
	The product of five and the quotient of 3 and a number
	The quotient of six and five times a number

Expression	Translation into words (use sum, difference, product or quotient)
	The sum of 16 and the square of a number.
	The quotient of 4 more than a number and 7
	The product of 4 and the difference of 7 and the number.
$2(x - 4)$	
$\frac{9}{x^3}$	
$5x + 10$	
$3x - 10$	
EQUATION	Translation into words
$\frac{x}{2} = 10$	
$2x - 1 = 15$	
$3x = x + 1$	
$(x + 1)^2 = 0$	

MODULE E

Topic: Terms, Factors, And Coefficients  
Evaluating Expressions

Fill in the tables below:

Expression	List all <u>terms</u>	List all <u>coefficients</u> of the terms with variables
$2x - 5y$		
$6x^2 + 3y - 4$		
$\frac{3m}{4} - \frac{1}{2}n + \frac{p}{5}$		
$x - y^2 + 4$		
$x + \frac{y}{3} - \frac{2w}{9} + \frac{v}{7}$		

Expression	List all <u>Factors</u>
$2x$	
$-7ab$	
$\frac{2}{5}xyz$	

Evaluate each of the following:

1.  $x^2 - y + 3z$  if  $x = -4, y = -1, z = 4$

2.  $(x + y)(y - x)$  if  $x = 3, y = -9$

3.  $\frac{2a^2 - 3b}{b - a}$  if  $a = -2, b = -1$

4.  $-7x + 15y$  if  $x = -\frac{3}{14}, y = \frac{1}{5}$

MODULE E  
Topic: Solving Equations

Solve AND CHECK each of the following on a separate sheet of paper.

1.  $-3x - 5 = 10$

2.  $17 = \frac{2}{3}x - 21$

3.  $-9x - 4 = -8x + 7$

4.  $\frac{1}{2}x - 7 = -\frac{3}{2}x + 15$

5.  $-3(x - 2) = x + 10$

6.  $\frac{-x}{9} = -11$

7.  $\frac{-3x}{4} - 2 = -17$

8.  $-\frac{4}{5}x = 10$

9.  $\frac{2}{7}x = -28$

10.  $5(x - 3) + 2x = 3(6x - 5)$

11.  $6(3 + n) = 5(n - 1)$

12.  $5t - 3 - t = 3(t + 4) - 15$

13.  $-4(2x + 1) + 12 = -5x + 5$

14.  $2(x - 3) - 5 = 3(x + 2) - 18$

15.  $4(2x - 3) + 7 = 3x + 5$

Module E  
**CUMULATIVE REVIEW (mod A – E)**

1. Evaluate  $(2^3 + 4) \div 6 + 2(8 - 4)$
2. Estimate  $319 \div 38$  by rounding to the nearest 10.
3. What is the value of  $5^0$ ?
4. Evaluate  $0 \div 10$  and  $(8 + 5) \div (2^2 - 4)$
5. Rewrite the expression  $7 \cdot (5 + 3)$  as an equivalent expression using the commutative property of addition:  $7 \cdot (5 + 3) = \underline{\hspace{2cm}}$
6. Rewrite the expression  $7 \cdot (5 + 3)$  as an equivalent expression using the distributive property:  $7 \cdot (5 + 3) = \underline{\hspace{2cm}}$
7. Evaluate  $\left(\frac{1}{4} + 3\frac{2}{3}\right) \div 3$
8. ESTIMATE  $\left(3\frac{1}{5}\right)\left(1\frac{7}{8} + 2\frac{1}{9} - \frac{9}{10}\right)$
9. Evaluate:  $\frac{1}{3} + \frac{5}{8} \div \frac{3}{4}$
10. A class has 17 male students and 14 female students. What fraction of the students are female?
11. Assume Foothill College has 11,500 students. If three-fifths of the students at Foothill College are under age 25, how many students at Foothill are 25 or older?
12. Find the prime factorization of 450.
13. List 4 multiples of 8.
14. Divide 18.24 by 0.3
15. Evaluate  $0.15 + 3.1 - 1.149$
16. Evaluate  $(0.3)^2 + \frac{3}{500}$

17. Which is larger:  $\frac{3}{8}$  or 0.35?
18. Evaluate  $(-4)^2 - 3(-2) + \frac{15}{-5}$
19.  $(-2.12 - 1.84)(-1.4 + 0.9)$
20. Evaluate  $-m^2 - 5a - 3b^2$  if  $a = 7$ ,  $b = -2$ , and  $m = -5$
21. Write an algebraic equation for the following. Assume  $n$  is the number.  
The product of 5 and 3 less than a number is the square of the number.
22. Translate into words: Let  $x =$  "a number" a)  $5x - 9$  b)  $x^2 - 1 = 2x + 3$
23. Simplify by combining like terms:  
 $(5.2x^2 - 4x + 3.8) - (0.45x^2 - 5.2x + 1) + 3(1.1x^2 - 2.8)$
24. Solve and check:  $\frac{2}{3}x - 9 = -11$
25. Solve and check:  $4x - 3 = 12x + 21$
26. Solve:  $2(x - 9) + 3(4 - x) = 10 + x$
27. Solve:  $\frac{1}{5}x - 9 = \frac{3}{5}x + 3$
28. Solve:  $3x + 8 = 2(x + 4)$
29. Is  $x = \frac{1}{4}$  a solution to  $2x - \frac{9}{2} = 3x - \frac{17}{4}$ ? Check using substitution.