

KEY KEY KEY KEY KEY

MODULE E

Topic: Translating Expressions

$$\text{○} + \text{□}$$

the sum of ○ and □

$$\text{○} - \text{□}$$

the difference of ○ and □

$$\text{○} \cdot \text{□}$$

the product of ○ and □

$$\frac{\text{○}}{\text{□}}$$

the quotient of ○ and □

Answers can vary,
Check w/
instructor
too!

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

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Expression	Translation into words (use sum, difference, product or quotient)
$16 + x^2$	The sum of 16 and the square of a number.
$\frac{x + 4}{7}$	The quotient of 4 more than a number and 7
$4(7 - x)$	The product of 4 and the difference of 7 and the number.
$2(x - 4)$	<i>The product of two and the difference of a number and 4</i>
$\frac{9}{x^3}$	<i>The quotient of nine and the cube of a number</i>
$5x + 10$	<i>The sum of five times a number and ten</i>
$3x - 10$	<i>The difference of triple a number and 10</i>
EQUATION	Translation into words
$\frac{x}{2} = 10$	<i>The quotient of a number and two is ten.</i>
$2x - 1 = 15$	<i>The difference of twice a number and one is fifteen.</i>
$3x = x + 1$	<i>The product of three and a number is one more than the number.</i>
$(x + 1)^2 = 0$	<i>The square of one more than a number is zero.</i>

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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
$2x - 5y$	$2x, -5y$	$2, -5$
$6x^2 + 3y - 4$	$6x^2, 3y, -4$	$6, 3$
$\frac{3m}{4} - \frac{1}{2}n + \frac{p}{5}$	$\frac{3m}{4}, -\frac{1}{2}n, \frac{p}{5}$	$\frac{3}{4}, -\frac{1}{2}, \frac{1}{5}$
$x - y^2 + 4$	$x, -y^2, 4$	$1, -1$
$x + \frac{y}{3} - \frac{2w}{9} + \frac{v}{7}$	$x, \frac{y}{3}, -\frac{2w}{9}, \frac{v}{7}$	$1, \frac{1}{3}, -\frac{2}{9}, \frac{1}{7}$

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

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 $x = -\frac{3}{14}, y = \frac{1}{5}$

29
72
11
$\frac{9}{2}$

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MODULE E

Topic: Solving Equations

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

1.	$-3x - 5 = 10$	-5	2.	$17 = \frac{2}{3}x - 21$	57
3.	$-9x - 4 = -8x + 7$	-11	4.	$\frac{1}{2}x - 7 = -\frac{3}{2}x + 15$	11
5.	$-3(x - 2) = x + 10$	-1	6.	$\frac{-x}{9} = -11$	99
7.	$\frac{-3x}{4} - 2 = -17$	20	8.	$-\frac{4}{5}x = 10$	$-\frac{25}{2}$
9.	$\frac{2}{7}x = -28$	-98	10.	$5(x - 3) + 2x = 3(6x - 5)$	0
11.	$6(3 + n) = 5(n - 1)$	-23	12.	$5t - 3 - t = 3(t + 4) - 15$	0
13.	$-4(2x + 1) + 12 = -5x + 5$	1	14.	$2(x - 3) - 5 = 3(x + 2) - 18$	1
15.	$4(2x - 3) + 7 = 3x + 5$	2			

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Module E
CUMULATIVE REVIEW (mod A – E)

1. Evaluate $(2^3 + 4) \div 6 + 2(8 - 4)$

10

2. Estimate $319 \div 38$ by rounding to the nearest 10.

8

3. What is the value of 5^0 ?

1

4. Evaluate $0 \div 10$ and $(8 + 5) \div (2^2 - 4)$

undefined

5. Rewrite the expression $7 \cdot (5 + 3)$ as an equivalent expression using the commutative property of addition: $7 \cdot (5 + 3) = \boxed{7 \cdot (3 + 5)}$

6. Rewrite the expression $7 \cdot (5 + 3)$ as an equivalent expression using the distributive property: $7 \cdot (5 + 3) = \boxed{7 \cdot 5 + 7 \cdot 3}$

7. Evaluate $\left(\frac{1}{4} + 3\frac{2}{3}\right) \div 3$

$\frac{47}{36}$

8. ESTIMATE $\left(3\frac{1}{5}\right)\left(1\frac{7}{8} + 2\frac{1}{9} - \frac{9}{10}\right)$

9

9. Evaluate: $\frac{1}{3} + \frac{5}{8} \div \frac{3}{4}$

$\frac{7}{6}$

10. A class has 17 male students and 14 female students. What fraction of the students are female? $\boxed{\frac{14}{31}}$

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.

4600
 $2 \cdot 3 \cdot 3 \cdot 5 \cdot 5$

13. List 4 multiples of 8.

8, 16, 24, 32

14. Divide 18.24 by 0.3

60.8

15. Evaluate $0.15 + 3.1 - 1.149$

2.101

16. Evaluate $(0.3)^2 \div \frac{3}{500}$

$\frac{12}{125}$ or 0.096

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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.

$$5(x - 3) = x^2$$

22. Translate into words: Let $x =$ "a number" a) $5x - 9$ b) $x^2 - 1 = 2x + 3$

- a) The difference of five times a number and nine.
b) One less than the square of a number is three more than twice the number

23. Simplify by combining like terms:

$$(5.2x^2 - 4x + 3.8) - (0.45x^2 - 5.2x + 1) + 3(1.1x^2 - 2.8)$$

$$8.05x^2 + 1.2x - 5.6$$

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.

NO

$\frac{3}{8}$
19
1.98
 -72

-3
-3
-8
-30
0