3.4 – Communicate With Algebra Worksheet
MPM1D

SOLUTIONS

1. Identify the coefficient and variable part for each term

Term	Coefficient	Variable
a) $2y$	2	y
b) $-3x$	-3	x
c) mn	1	mn
d) $\frac{1}{2}x^2$	$\frac{1}{2}$	x^2
e) $-w^2$	-1	w^2
f) $-0.4gh^3$	-0.4	gh^3

2. $7x^2 + 3xy + 4y^2$ is a:

A) monomial   B) binomial   **C) trinomial**   D) term

3. Classify each polynomial by the number of terms.

a) $-2x$

monomial

b) $6y^2 + 2y - 1$

trinomial

c) $a - \frac{1}{2}b$

binomial

d) $3u^2 - uv + 2v^2$

trinomial

e) $3k^2 - \frac{1}{2}k$

binomial

f) $m + 0.2n - 0.3 + mn$

4-term polynomial

4. The degree of $4u - 5u^2 + 9$ is:

A) 1   **B) 2**   C) 3   D) 4

5. State the degree of each term.

a) $5x^2$

2

b) $-6y$

1

c) -3

0

d) u^2v^4

6

e) $\frac{1}{3}x^2y^3$

5

f) $0.2a^2b$

3

6. State the degree of each polynomial.

a) $3x - 4$

1

b) $y^2 + 3y - 1$

2

c) $m - 2m^3$

3

d) $a^3b^2 - 8a^2b^5$

7

e) $2x^2y^4 - \frac{2}{5}xy^3$

6

7. In a TV trivial show, a contestant receives 500 points for a correct answer and loses 200 points for an incorrect answer. Let c represent the number of correct answers and i represent the number of incorrect answers. Which expression describes a contestant's total points?

A) $500c + 200i$ **B)** $500c - 200i$ **C)** $500i + 200c$ **D)** $500i - 200c$

8. Substitute the given values and evaluate each expression.

a) $3x + 5$ if $x = 5$

$= 3(5) + 5$
$= 15 + 5$
$= 20$

b) $4y + 4$ if $y = -2$

$= 4(-2) + 4$
$= -8 + 4$
$= -4$

c) $a^2 + 2b - 7$ if $a = 4, b = 1$

$= (4)^2 + 2(1) - 7$

$= 16 + 2 - 7$

$= 18 - 7$

$= 11$

d) $2m^2 - 3n + 8$ if $m = -2, n = 5$

$= 2(-2)^2 - 3(5) + 8$

$= 8 - 15 + 8$

$= 1$

9. Meredith has a summer job at a fitness club. She earns a $5 bonus for each student membership and a $7 bonus for each adult membership she sells.

a) Write a polynomial expression that describes Meredith's total bonus.

$5s + 7a$

b) Identify the variable and the coefficient of each term and explain what they mean.

Term	Variable	Coefficient	Meaning
5s	s	5	# of student memberships she sells
7a	a	7	# of adult memberships she sells

c) How much will Meredith's bonus be if she sells 12 student memberships and 10 adult memberships?

$5(12) + 7(10)$

$= 60 + 70$

$= 130$

$\boxed{\$130}$

10. An arena charges $25 for gold seats, $18 for red seats, and $15 for blue seats.

a) Write an expression that describes the total earnings from seat sales.

$$25g + 18r + 15b$$

b) Identify the variable and the coefficient of each term and explain what they mean.

Term	Variable	Coefficient	Meaning
$25g$	g	25	# of gold seats sold
$18r$	r	18	# of red seats sold
$15b$	b	15	# of blue seats sold

c) How much will the arena earn if it sells 100 gold seats, 200 blue seats, and 250 red seats?

$$25(100) + 18(250) + 15(200)$$

$$= 10\,000$$

$10\,000

11. On a multiple-choice test, you earn 2 points for each correct answer and lose 1 point for each incorrect answer.

a) Write an expression for a student's total score.

$$2c - 1w$$

b) Maria answered 15 questions correctly and 3 incorrectly. Find Maria's total score.

$$2(15) - 1(3)$$

$$= 30 - 3$$

$$= 27$$

Answers:

1a) 2 ; y b) -3 ; x c) 1; mn d) $\frac{1}{2}$; x^2 e) -1 ; w^2 f) -0.4 ; gh^3

2) C: Trinomial

3) a) monomial b) trinomial c) binomial d) trinomial e) binomial f) 4-term polynomial

4) B: 2

5) a) 2 b) 1 c) 0 d) 6 e) 5 f) 3

6) a) 1 b) 2 c) 3 d) 7 e) 6

7) B

8) a) 20 b) -4 c) 11 d) 1

9) a) $5s + 7a$

b)

Term	Variable	Coefficient	Meaning
$5s$	s	5	Number of student memberships she sells
$7a$	a	7	Number of adult memberships she sells

c) $130

10) a) $25g + 18r + 15b$

b)

Term	Variable	Coefficient	Meaning
25g	g	25	Number of gold seats sold
18r	r	18	Number of red seats sold
15b	b	15	Number of blue seats sold

c) $10 000

11) a) $2c - w$ b) 27