

Grade 9 Pre-AP Math

Unit 1 – Number Sense and Algebra – Quiz 1

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Victim: Mr. Solutions

Get another stupendous result Mr. S.!! How do you do it?

KU	APP	COM
31/31	8/8	15/15

1. Match each term in the left column with the **best** definition in the right column. (8 COM)

<u>e</u> ✓ Degree-0 Term	a $-6abcd$
<u>f</u> ✓ Polynomial	b A symbol, usually a letter, which represents an unknown or unspecified value.
<u>g</u> ✓ Term	c Terms that contain equivalent variable parts (literal coefficients).
<u>h</u> ✓ Expression	d A number that divides exactly into another.
<u>a</u> ✓ Degree-4 Term	e 7^4
<u>b</u> ✓ Variable	f An algebraic expression in which each term consists of constants and/or variables combined using only multiplication (including powers).
<u>c</u> ✓ Like Terms	g Any mathematical calculation combining constants and/or variables using any operations except for addition and subtraction.
<u>d</u> ✓ Factor	h Any mathematical calculation combining constants and/or variables using any valid mathematical operations.

2. d ✓ Which expression **CANNOT** be simplified? (1 KU)

(a) $2x + 9x$

(b) $a + \frac{1}{5}a$

(c) $5p^2 - 7p^2$

unlike terms

(d) $5n^2 - 7n$

3. d ✓ Which statement is **FALSE**? (1 KU)

(a) $-3a$ and $4b^2$ are unlike terms.

(b) $\frac{1}{2}$, 3, and -0.7 are like terms.

(c) Like terms have equivalent variable parts.

(d) x , x^2 and $2x^3$ are like terms.

Modified True/False (5 KU)

Indicate whether each statement is **true** or **false**. If false, **change** the **underlined part** to make the statement true.

4. T/F F ✓ $2^4(3^4) = 6^{4+4} = 6^8$ *✓ = 1/2 mark* Change: $16(81) = 1296$ ✓ *Also: $2^4(3^4) = (2 \times 3)^4 = 6^4$*

5. T/F F ✓ The expression " $-x^4$ " means " $(-x)(-x)(-x)(-x)$." Change: $-x(x)(x)(x)$ ✓

6. T/F F ✓ The expression " $6 - 2x$ " means "double a number reduced by 6." Change: 6 reduced by double a # ✓

7. T/F F ✓ The expression " $2x + 3x$ " **simplifies to** " $5x^2$." Change: $5x$ ✓

8. T/F F ✓ The expression " $2x(3x)$ " **simplifies to** " $6x$." Change: $6x^2$ ✓

KU	APP	TIPS	COM
-0	-0	-0	-0

10. Evaluate. (8 KU)

$$\begin{aligned} \text{(a)} \quad & -3^4 - 2(3^3 - 5^3) - 7(3 - 5)^3 \\ & = -81 - 2(27 - 125) - 7(-2)^3 \\ & = -81 - 2(-98) - 7(-8) \\ & = -81 - (-196) - (-56) \\ & = -81 + 196 + 56 \\ & = 171 \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & -7a^2b^3 - 2a(a - 3b)^2, \text{ if } a = 3 \text{ and } b = -2 \\ & = -7(3)^2(-2)^3 - 2(3)[3 - 3(-2)]^2 \\ & = -7(9)(-8) - 6[3 - (-6)]^2 \\ & = 504 - 6(9)^2 \\ & = 504 - 6(81) \\ & = 504 - 486 \\ & = 18 \end{aligned}$$

This step shows how you should **THINK** about multiplication.

11. Simplify each of the following expressions if possible. Show all steps!! (16 KU)

$$\begin{aligned} \text{(a)} \quad & 5a^2b + 3ab - 6a^2b + 7ab \\ & = 5a^2b - 6a^2b + 3ab + 7ab \\ & = -a^2b + 10ab \end{aligned}$$

Note: $-a^2b$ can also be written $-1a^2b$

③

$$\begin{aligned} \text{(b)} \quad & (5a^2b)(+3ab)(-6a^2b)(+7ab) \\ & = 5(3)(-6)(7)a^2aa^2abbbb \\ & = -630a^6b^4 \end{aligned}$$

This question involves multiplication, which has **NOTHING** to do with the concept of like terms.

③

$$\begin{aligned} \text{(c)} \quad & (5a^2b + 3ab) - (6a^2b + 7ab) \\ & = 5a^2b + 3ab + (-6a^2b - 7ab) \\ & = 5a^2b + 3ab - 6a^2b - 7ab \\ & = -a^2b - 4ab \end{aligned}$$

④

$$\begin{aligned} \text{(d)} \quad & \frac{32b^9d^2(-bd^4)}{2^3(2b^3d)^2} \\ & = \frac{-32b^9bd^2d^4}{8[2^3(b^3)^2d^2]} \\ & = \frac{-32b^{10}d^6}{32b^6d^2} \\ & = (-\frac{32}{32})(\frac{b^{10}}{b^6})(\frac{d^6}{d^2}) \\ & = -1b^4d^4 \\ & = -b^4d^4 \end{aligned}$$

LAST!

12. Write **fully simplified** expressions for both the **perimeter** and **area** of the following figure. (8 APP)

(a) Perimeter

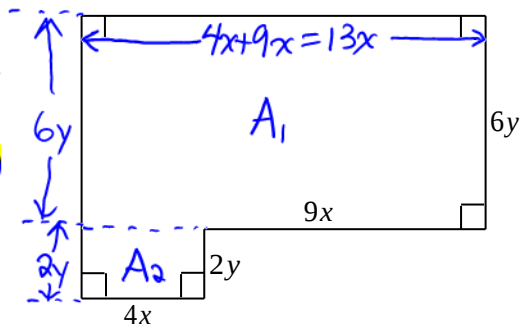
$$\begin{aligned} P &= 13x + 6y + 9x + 2y + 4x + 8y \\ &= 13x + 9x + 4x + 6y + 2y + 8y \\ &= 26x + 16y \end{aligned}$$

Unlike Terms

(b) Area

$$\begin{aligned} A &= A_1 + A_2 \\ &= 13x(6y) + 4x(2y) \\ &= 78xy + 8xy \\ &= 86xy \end{aligned}$$

Like Terms



KU	APP	TIPS	COM
- 0	- 0	- 0	- 0