MPM 1D9 | **Semester 2, 2014 - 2015**

Grade 9 Pre-AP Math
Unit 1 – Number Sense and Algebra – Quiz 3

Mr. Nolfi
Victim: Mr. Solutions

This is an impressive display of mathematical prowess Mr. A. !!

KU	APP	COM
35/35	10/10	10/10

Modified True/False **(5 KU)**

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

1. **T/F** F ✓ $2^3+5^3=(2+5)^3=7^3=343$ (✓ = ½ mark) **Change:** $8+125=133$ ✓
2. **T/F** F ✓ The expression $-3x^3$ means $-3x-x-x$. **Change:** $-3(x)(x)(x)$ ✓
3. **T/F** F ✓ The expression $5(-3x)$ means "triple a number subtracted from 5." (Answers will vary) **Change:** 5 times the product of a number and -3 ✓
4. **T/F** F ✓ $3(b-5)=-15b$ **Change:** $3b-15$ ✓
5. **T/F** F ✓ $3b(-abc)=(3b)(-2a)(3b)(b)(3b)(c)=-54ab^3c$ **Change:** $3(-a)(b)(b)c=-3ab^2c$ ✓

6. ***Evaluate*** each expression for the given values of the variables. **(10 KU)**

(a) $-3xy-(x-y)^3$, $x=4$, $y=-1$

$=-3(4)(-1)-[4-(-1)]^3$ ✓ ✓

$=12-(5)^3$ ✓

$=12-125$ ✓

$=-113$ ✓

5

(b) $-3xy(x^3-y^3)$, $x=4$, $y=-1$

$=-3(4)(-1)[(4)^3-(-1)^3]$ ✓ ✓

$=12(64-(-1))$ ✓

$=12(65)$ ✓

$=780$ ✓

5

7. ***Fully*** simplify each of the following expressions if possible. Show all steps!! **(25 KU)**

(a) $-5a^2b-3ab+6a^2b-7ab$ ✓

$=-5a^2b+6a^2b-3ab-7ab$

$=a^2b-10ab$ ✓ ✓

3

(b) $(-5a^2b)(-3ab)(+6a^2b)(-7ab)$

$=-5(-3)(6)(-7)(a^2)(a^1)(a^2)(a^1)(b^1)(b^1)(b^1)(b^1)$ ↑

$=-630a^6b^4$ ✓ ✓ ✓

3

(c) $-(5a^2b+3ab)-(6a^2b-7ab)$

$=+(-5a^2b-3ab)+(-6a^2b+7ab)$ ✓

$=-5a^2b-3ab-6a^2b+7ab$

$=-5a^2b-6a^2b-3ab+7ab$

$=-11a^2b+4ab$ ✓

4

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

Continuation of question 7.

(d) $-2b^3\left(5a^2b^3+3a^3b\right)-5a\left(6a^2b^4-7ab^6\right)$

$=-10a^2b^6-6a^3b^4-30a^3b^4+35a^2b^6$

$=-10a^2b^6+35a^2b^6-6a^3b^4-30a^3b^4$

$=25a^2b^6-36a^3b^4$ ✓ ✓ (5)

(e) $\left(q^{-4}\right)^{-2}-\left(3q^{10}\right)\left(-6q^{-2}\right)$

$=q^{(-4)(-2)}-3(-6)(q^{10})(q^{-2})$

$=q^8-(-18q^{10+(-2)})$

$=1q^8+18q^8$

$=19q^8$ ✓ (4)

(f) $\dfrac{128b^{12}d\left(-8b^2d^2\right)}{2^3\left(2b^3d\right)^3}$

$=\dfrac{128(-8)(b^{12})(b^2)(d)(d^2)}{8[2^3(b^3)^3d^3]}$ ✓

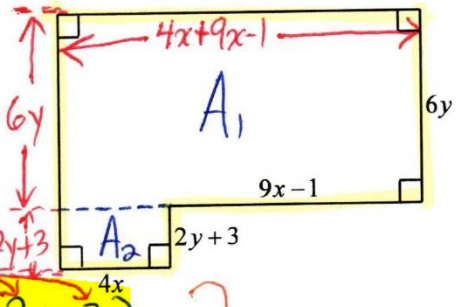
$=\dfrac{-1024b^{14}d^3}{8(8)(b^9)d^3}$

$=\dfrac{-1024b^{14}d^3}{64b^9d^3}$ ✓

$=\left(\dfrac{-1024}{64}\right)\left(\dfrac{b^{14}}{b^9}\right)\left(\dfrac{d^3}{d^3}\right)$

$=-16b^5$ ✓ ✓ (5)

3. Write ***fully simplified*** expressions for both the ***perimeter*** and ***area*** of the following figure. **(10 APP)**



(a) Perimeter

$P=4x+9x-1+6y+9x-1+2y+3+4x+2y+3+6y$ ✓

$=13x+9x+4x+6y+2y+2y+6y-1-1+3+3$ ✓

$=26x+16y+4$ units ✓ ✓ (5)

(b) Area

$A=A_1+A_2$

$=6y(4x+9x-1)+4x(2y+3)$ ✓

$=6y(13x-1)+4x(2y+3)$

$=78xy-6y+8xy+12x$

$=78xy+8xy+12x-6y$ ✓

$=86xy+12x-6y$ units^2 ✓ (5)