

Essay on mat101 case 1 answer template

[Business](#)



**ASSIGN
BUSTER**

Use this template to insert your answers for the assignment. Please use one of the four methods for showing your work (EE, Math Type, ALT keys, or neatly typed). Remember that your work should be clear and legible.

1. Identify the coefficients, variable terms (with exponents), and constants in the following expression.

$$2x^3+5y^2-3z+1$$

Coefficients: 2, 5, 3

Variable terms: x , y , z

Constants: 1

2. Identify the coefficients, variable terms (with exponents), and constants in the following expression.

$4z^5-8x^2-6$

Coefficients: 4, 8

Variable terms: z^5 , x^2

Constants: -6

3. Combine like terms in the following expression. (Hint: You can color code the like terms.)

$$8x^2+3x+9-x^2+7x-2+y$$

Calculations:

$$8x^2+3x+9-x^2+7x-2+y= 8x^2-x^2+7x+3x+y-2+9= 7x^2+10x+y+7$$

Answer: $7x^2+10x+y+7$

4. Distribute and combine like terms in the following expression.

$$3(6y^2-9+7x-2x^2-3x-6)$$

Calculations:

$$3(6y^2-9+7x-2x^2-3x-6)= 3(6y^2-2x^2+4x-15)= 18y^2-6x^2+12x-45$$

Answer: $18y^2-6x^2+12x-45$

5. Write and simplify an expression that applies the distributive property.

Include at least 3 different terms.

Calculations:

$$2(5y^2-6+4y+4x^2-6x+8+3x-y)= 2(5y^2+4x^2+3y-3x+2)= 10y^2+8x^2+6y-6x+4$$

Answer $10y^2+8x^2+6y-6x+4$

6. Simplify the expression using the order of operations. (Note: * stands for multiplication)

$$(6*2-4) - 3(8-5) * 7$$

2

Calculations:

$$(6*2-4)^2-3*8-5*7 = (12-4)^2-3*7 = 4-63= -59$$

Answer: -59

7. Simplify the expression using the order of operations.

$$(3-5) * -| -22 - 52 * 4|$$

Calculations:

$$(3-5) * -| -22 - 52 * 4|=(-2) * -| -4 - 25 * 4|=(-2) * -| -4 - 100|=(-2) * -| -104|=(-2) * -(104)= 208$$

Answer: 208

8. Translate the following statement.

The product of 3 more than a number and 3 less than the same number.

Calculations: a- number

$$3a > a > 3$$

Answer: $3a > a > 3$

9. Translate and solve the following statement.

The quotient of $2x$ and 4 is the same as the product of 6 and 3.

Calculations:

$$2x/4 = 6*3 = 18 \Rightarrow x = 18*4/2 = 18*2 = 36$$

Answer: $2x/4 = 6*3$; $x = 36$

10. Write and translate your own statement using at least two different operations (i. e. - add, subtract, multiply, divide).

Calculations:

Product of $8x$ and 2 is the same as the quotient of 64 and 2.

$$8x*2 = 64$$

$$16x = 64$$

$$x = 4$$

Answer: $8x*2 = 64$; $x = 4$

11. Simplify the expression. (Hint: Careful with the signs)

$$-6(-42-7)$$

Calculations:

$$-6(-42-7) = -6(-49) = -6(-49) = 294$$

Answer: 138

12. Simplify the expression.

$$(-10)^2 * -|23-7+12|$$

Calculations:

$$(-10)^2 * -|23-7+12| = 100 * -|8-7+12| = 100 * -|20-7| = 100 * -|13| = 100 * (-13) = -1300$$

Answer: -1300

For problems 13-14, evaluate the expressions using the following values.

$$x = -3y = 8z = -12$$

13. $2y + 3z$

$$4x$$

Calculations:

$$2y + 3z + 4x = 2*8 + 3*(-12) + 4*(-3) = 2*2 + 3*(-3) - 3 = 4 - 9 - 3 = -5$$

Answer: 53

14. $4x^2 - 2z^2$

Calculations:

$$4x^2 - 2z^2 = 4(-3)^2 - 2(-12)^2 = 4*9 - 2*144 = 36 - 288 = -252$$

Answer: -252

For problems 15-16, evaluate the expressions using the following values.

$$a = -1b = 11c = -7$$

15. $14a + (7 - 6b)$

$$c$$

Calculations:

$$14ac + 7 - 6b = 14(-1)(-7) + 7 - 6*1 = 2 + 1 = 3$$

Answer: 3

16. $(a^2+b^2)(b^2-c^2)$

Calculations:

$$(a^2+b^2)(b^2-c^2) = ((-1)^2+12)(12-(-7)^2) = (1+1)(1-49) = 2(-48) = -96$$

Answer:-96

For problems 17-20, solve the equation. Check your answer by plugging it back into the equation.

17. $10x = 9x-15$

Calculations:

$$10x = 9x-15$$

$$10x - 9x = -15$$

$$x = -15$$

Check

$$10(-15) = 9(-15) - 15$$

$$-150 = -135 - 15$$

$$-150 = -150$$

Answer: -15

18. $4x-9 = 7x+3$

Calculations:

$$-9-3 = 7x-4x$$

$$3x = -12$$

$$x = -4$$

Check

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

$$4(-4)-9 = 7(-4)+3$$

$$-16-9=-28+3$$

$$-25=-25$$

Answer:-4

$$19. -3(8x-2x) = 72$$

Calculations:

$$-3(8x-2x) = 72$$

$$-3(6x) = 72$$

$$x = 72/(-18)$$

$$x = -4$$

Check

$$-3(8(-4)-2(-4)) = 72$$

$$-3(-32+8) = 72$$

$$-3(-24) = 72$$

$$72 = 72$$

Answer: -4

$$20. 9(4y-3)-12y = 4(27+5y)$$

Calculations:

$$9(4y-3)-12y = 4(27+5y)$$

$$36y-27-12y = 108+20y$$

$$24y-20y = 108+27$$

$$4y = 135$$

$$y = 33.75$$

Check

$$9(4(33.75)-3)-12(33.75) = 4(27+5(33.75))$$

$$9(135-3)-405 = 108+675$$

$$1188-405 = 783$$

$$783 = 783$$

Answer: 33.75