

# [Essay on mat101 case 1 answer template](https://assignbuster.com/essay-on-mat101-case-1-answer-template/)

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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.   
2x3+5y2-3z+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.

## 4z5-8x2-6

Coefficients: 4, 8   
Variable terms: z5, x2   
Constants: -6   
3. Combine like terms in the following expression. (Hint: You can color code the like terms.)   
8x2+3x+9-x2+7x-2+y

## Calculations:

8x2+3x+9-x2+7x-2+y= 8x2-x2+7x+3x+y-2+9= 7x2+10x+y+7   
Answer: 7x2+10x+y+7   
4. Distribute and combine like terms in the following expression.   
3(6y2-9+7x-2x2-3x-6)

## Calculations:

3(6y2-9+7x-2x2-3x-6)= 3(6y2-2x2+4x-15)= 18y2-6x2+12x-45   
Answer: 18y2-6x2+12x-45   
5. Write and simplify an expression that applies the distributive property. Include at least 3 different terms.

## Calculations:

2(5y2-6+4y+4x2-6x+8+3x-y)= 2(5y2+4x2+3y-3x+2)= 10y2+8x2+6y-6x+4   
Answer 10y2+8x2+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)2-38-5\*7 = (12-4)2-33\*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:   
2x4= 6\*3= 18x= 18\*4/2= 18\*2= 36   
Answer: 2x4= 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= 642   
16x= 32   
x= 2   
Answer: 8x\*2= 642; x= 2   
11. Simplify the expression. (Hint: Careful with the signs)   
-6(-42-7)   
Calculations:   
-6(-42-7)= -6(-16-7)= -6(-23)= 138

## 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+3z4x= 2\*8+3(-12)4(-3)= 2\*2+3(-3)-3= 4-9-3= 53

## Answer: 53

14. 4x2-2z2   
Calculations:   
4x2-2z2 = 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. (a2+b2)(b2-c2)   
Calculations:   
(a2+b2)(b2-c2)= ((-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