

**Assignment # 1 MTH 201**  
**Fall 2019**

**Maximum Marks: 20**  
**Due Date: 29<sup>th</sup> Nov, 2019**

Please read the following instructions before attempting the solution of this assignment:

- To solve this assignment, you should have good command over 8-14 lectures.
- Try to get the concepts, consolidate your concepts and ideas from these questions which you learn in these lectures. You should concern the recommended books for clarification of concepts.
- Upload assignments properly through LMS. No Assignment will be accepted through email.
- Use Math Type or Equation Editor etc. for mathematical symbols and equations.
- Also remember that you are supposed to submit your assignment in Word format any other like scan images, HTML etc. will not be accepted and we will give zero marks correspond to these assignments.

<b>Question: 1</b>	<b>Marks: 10</b>
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Let  $f = \ln(u^2 + v^2 + w^2)$ , Where  $u = x + 2y$ ,  $v = 2x - y$ ,  $w = 2xy$

Use chain rule to find  $\frac{\partial f}{\partial x}$  and express the function in the form of  $x$  and  $y$ .

<b>Question: 2</b>	<b>Marks: 10</b>
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Find the directional derivative of the function  $(x, y) = xe^y + y \ln z$ , at the point  $(-1, 0, 1)$  and in the direction of the vector  $\vec{u} = \vec{i} - 2\vec{j} + 4\vec{k}$ .