

## PROBLEMS | DIVERGENCE

REFATH BARI

6/28/20

FINE

CALCULATE THE DIVERGENCE FOR ALL 6 VECTOR FIELDS	
1	<p>(a) <math>\mathbf{F} = x\mathbf{i} + y\mathbf{j}</math>,                      (b) <math>\mathbf{F} = y^3\mathbf{i} + xy\mathbf{j}</math>,</p> <p>(c) <math>\mathbf{F} = 3x^2\mathbf{i} - 6xy\mathbf{j}</math>,                      (d) <math>\mathbf{G} = x^2\mathbf{i} + 2z\mathbf{j} - y\mathbf{k}</math>,</p> <p>(e) <math>\mathbf{G} = \frac{4y}{x^2}\mathbf{i} + \sin(y)\mathbf{j} + 3\mathbf{k}</math>,                      (f) <math>\mathbf{G} = e^x\mathbf{i} + \ln(xy)\mathbf{j} + e^{xyz}\mathbf{k}</math>.</p>

NICE

COMPUTE THE DIVERGENCE OF THE VECTOR FIELDS	
1	divergence of $\mathbf{r}/r^3$ , where $r =  \mathbf{r} $ and $\mathbf{r} = x\mathbf{i} + y\mathbf{j} + z\mathbf{k}$
2	divergence of $\mathbf{G}(x, y, z) = 2x^3\mathbf{i} - 3xy\mathbf{j} + 3x^2z\mathbf{k}$

GREAT

1	Compute $\text{div } \mathbf{F}$ for $\mathbf{F} = (x^2y, xyz, -x^2y^2)$
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