

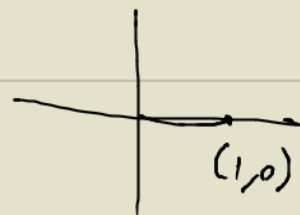
$$15. \lim_{t \rightarrow 0} \left( \frac{\tan t}{t} \vec{i} - e^t \vec{j} - 3t \vec{k} \right)$$

$$= \lim_{t \rightarrow 0} \frac{\tan t}{t} \vec{i} + \lim_{t \rightarrow 0} (-e^t \vec{j} - 3t \vec{k})$$

$$= \lim_{t \rightarrow 0} \frac{\sec^2 t}{1} \vec{i} - e^0 \vec{j} - 3(0) \vec{k}$$

$$= \vec{i} - \vec{j}$$

L'Hôpital



$$16. \vec{F}(t) = t^2 \vec{i} + \frac{2}{t-3} \vec{j}$$

$f(t) = t^2$  : CONTINUOUS EVERYWHERE

$g(t) = \frac{2}{t-3}$        $t-3=0$   
 $t=3$       DISC AT  $t=3$

CONTINUOUS:  $(-\infty, 3) \cup (3, \infty)$