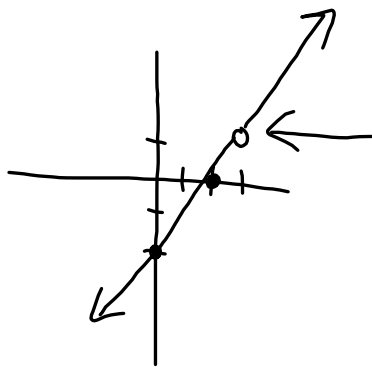


## 9.2 Analysing Rational Functions

Sketch the graph of  $f(x) = \frac{x^2 - 5x + 6}{x - 3} \rightarrow \frac{\cancel{x-3}(x-2)}{\cancel{x-3}}$

VA:  ~~$x = 3$~~       HA:  $-$       x-int  ~~$(3, 0)$~~  &  $(2, 0)$   
 D:  $x \neq 3$       R:  $y \neq 1$       y-int  $(0, -2)$



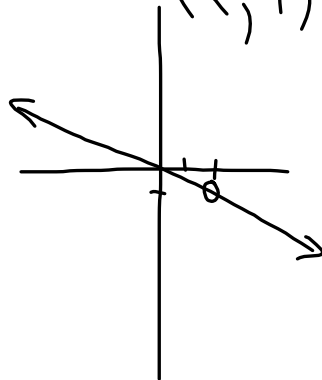
Point of Discontinuity (P.O.D.)  
 Occurs when there is a common  
 factor on top & bottom.

ex) Analyse (sketch) the two functions:

$$i) f(x) = \frac{x^2 - 2x}{4 - 2x}$$

$$= \frac{x(x-2)}{-2(x-2)}$$

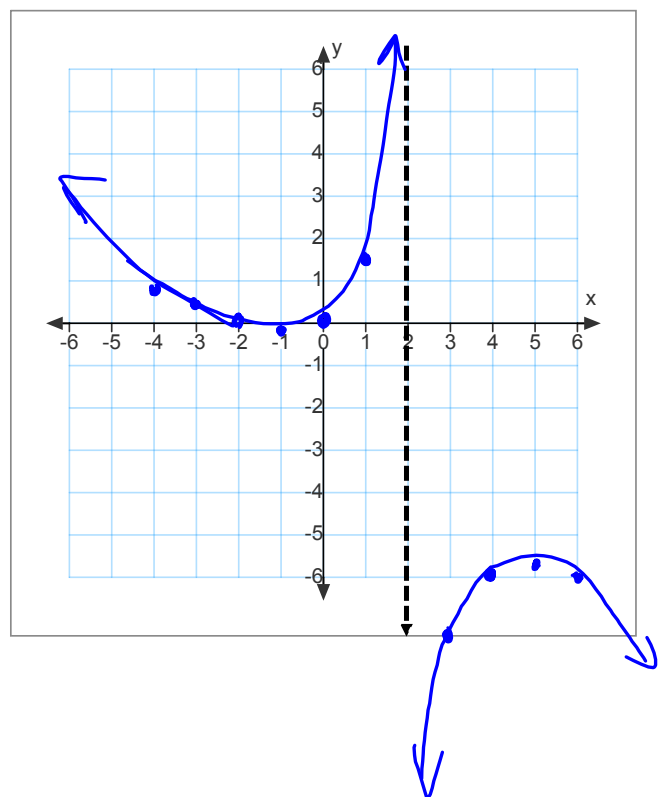
x-int: (0,0)  
 y-int: (0,0)  
 P.O.D. (2,-1)



$$ii) g(x) = \frac{x^2 + 2x}{4 - 2x}$$

$$= \frac{x(x+2)}{-2(x-2)}$$

x-int: (0,0) (-2,0)  
 y-int: (0,0)  
 VA: x=2



pg. 449 Ex 3)  $A(x) = \text{graph } \underline{2}$

$B(x) = \text{graph } \underline{3}$

$C(x) = \text{graph } \underline{1}$

Your Turn  
pg. 450

$K(x) = 3$

$L(x) = 1$

$M(x) = 2$

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# 3-11, 14, 16, 19, 21