5. $y = \frac{1}{4}x^4 - \frac{1}{3}x^3 - 3x^2$

① $y' = \frac{1}{4}\cdot 4x^3 - \frac{1}{3}\cdot 3x^2 - 3\cdot 2x$

$y' = x^3 - x^2 - 6x$

② $x^3 - x^2 - 6x = 0$

GCF $x(x^2 - x - 6) = 0$

PSD $x(x-3)(x+2) = 0$

$x=0 \quad x-3=0 \quad x+2=0$

$x=0 \quad x=3 \quad x=-2$

C.V.

③

	$-\infty$	$x=-2$	$x=0$	$x=3$	∞
TEST CASES	$x=-3$	$x=-1$	$x=1$	$x=4$	
PLUG INTO DERIV	x^3-x^2-6x	x^3-x^2-6x	x^3-x^2-6x	x^3-x^2-6x	
	$(-3)^3-(-3)^2-6(-3)$	$(-1)^3-(-1)^2-6(-1)$	$(1)^3-(1)^2-6(1)$	$4^3-4^2-6(4)$	
	$-27-9+18$	$-1-1+6$	$1-1-6$	$64-16-24$	
	\	/	\	/	

DEC $(-\infty, -2)$

INC $(-2, 0)$

DEC $(0, 3)$

INC $(3, \infty)$