

sketch:  $x^3 - x^2 - 5x - 3$

$P(0) = -3$  y-intercept

$P(1) = -8$   $P(3) = 0$  stop!

$\hookrightarrow x=3$   $(x-3) = \text{factor}$

	$x^2$	$2x$	$1$	
$x$	$x^3$	$2x^2$	$x$	No
$-3$	$-3x^2$	$-6x$	$-3$	Remainder!

Factor:  $x^2 + 2x + 1$

	$x$	$1$	$P(x) = (x-3)(x+1)(x+1)$
$x$	$x^2$	$x$	$P(x) = (x-3)(x+1)^2$
$1$	$x$	$1$	

