

Classwork 4
 Precalculus MTH 130
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Name: SOLUTIONS

1. Factor the following polynomials:

(1) $P(x) = x^3 - 3x^2 - 18x$

$$= x(x^2 - 3x - 18)$$

$$= x(x-6)(x+3)$$

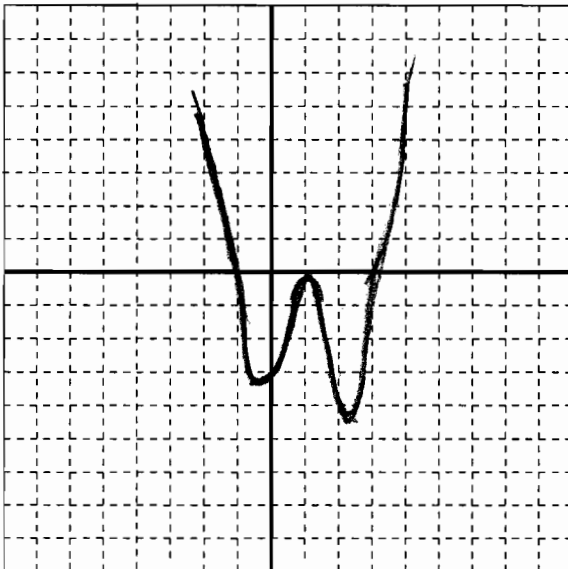
(2) $P(x) = x^4 + 4x^3 - 12x^2$

□

$$= x^2(x^2 + 4x - 12)$$

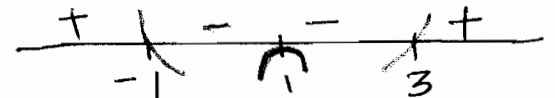
$$= x^2(x+6)(x-2)$$

2. Sketch the graph of the polynomial $P(x) = (x+1)(x-1)^2(x-3)$ using end behaviour and roots. □



Leading term: $x \cdot x^2 \cdot x = x^4$

Zeros: $x = -1$ mult = 1
 $x = 1$ mult = 2
 $x = 3$ mult = 1



Test pts $x = -2$ $x = 0$ $x = 2$ $x = 4$
 $+$ $-$ $-$ $+$

Y-intercept: -3