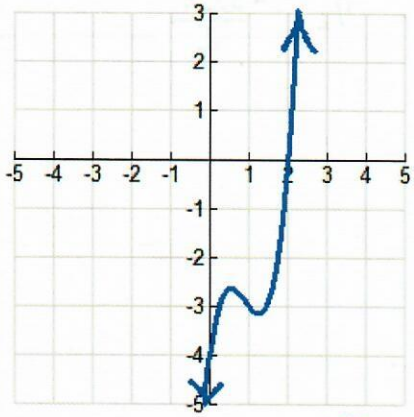
Math 3 – 3.5 WS: Finding ALL Zeros of Polynomials Name: Answers

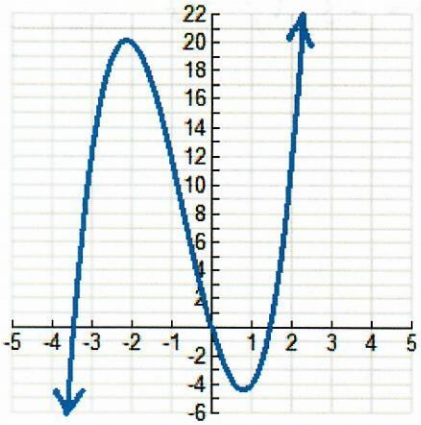
Directions: Use the given polynomial P (x) and its graph to find ALL the zeros for *P(x)*. Show work!

1.) $P(x) = 3x^3 - 8x^2 + 6x - 4$



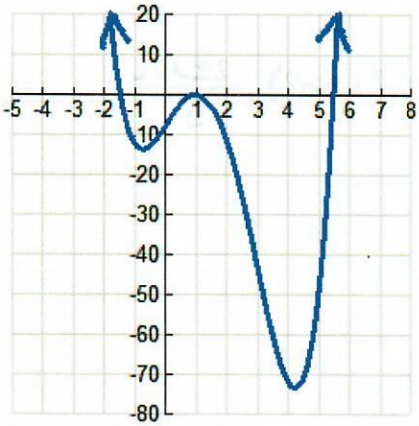
All zeros = $2, \frac{1 \pm i\sqrt{5}}{3}$

2.) $P(x) = 2x^3 + 4x^2 - 10x$



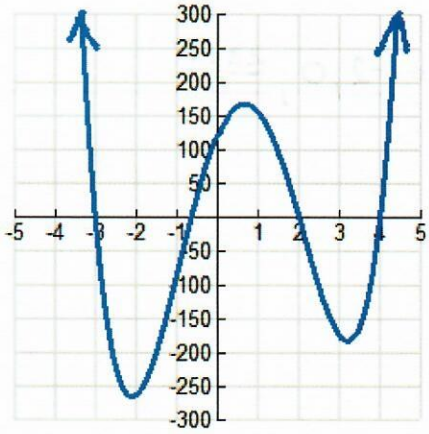
All zeros = $0, -1 \pm \sqrt{6}$

3.) $P(x) = x^4 - 6x^3 + x^2 + 12x - 8$



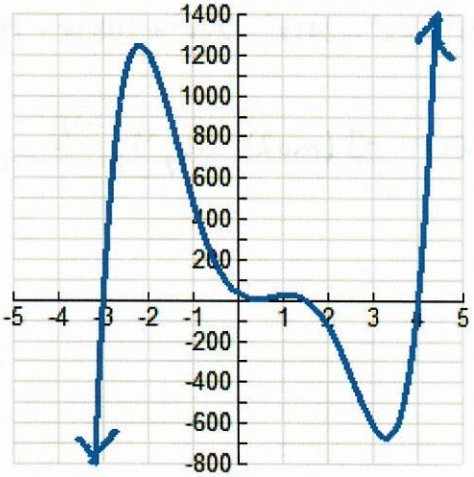
All zeros = $1 (mo 2), 2 \pm 2\sqrt{3}$

4.) $P(x) = 8x^4 - 19x^3 - 95x^2 + 142x + 120$



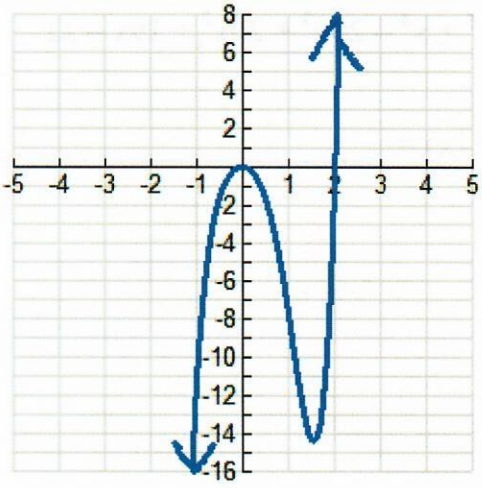
All zeros = $-3, 2, 4, -5/8$

5.) $P(x) = 10x^5 - 33x^4 - 83x^3 + 259x^2 - 165x + 36$



All zeros = $-3, \frac{3}{2}, 4, \frac{2 \pm i}{5}$

6.) $P(x) = 3x^5 - 4x^4 - x^3 - 6x^2$



All zeros = $0 (mo 2), 2, \frac{-1 \pm 2i\sqrt{2}}{3}$

Directions: Find all zeros of each polynomial P (x). Must show work!

7.) $P(x) = 7x^3 + 19x^2 - 11x - 15$

All Zeros of P (x) = $-3, 1, -5/7$

8.) $P(x) = 4x^3 + 10x^2 + 4x - 5$

All Zeros of P (x) = $1/2, \frac{-3 \pm i}{2}$

9.) $P(x) = 2x^4 - 9x^2 - 2x$

All Zeros of P (x) = $-2, 0, \frac{2 \pm \sqrt{6}}{2}$

10.) $P(x) = 3x^4 - 16x^3 + 30x^2 - 24x + 8$

All Zeros of P (x) = $2 \text{ (mo2)}, \frac{2 \pm i\sqrt{2}}{3}$

11.) $P(x) = x^5 + x^4 - 20x^3 + 20x^2 + 19x - 21$

All Zeros of P (x) = _____

12.) $P(x) = 12x^5 - 4x^4 - 241x^3 - 22x^2 + 1083x + 180$

All Zeros of P (x) = $-3 \text{ (mo2)}, 5/2, 4, -1/6$