

6.4 Notes

① Solve by Graphing

HW: 6-9 GRAPHING

ex  $X^3 + 3X^2 = X + 3$

$Y_1 = X^3 + 3X^2$

ZOOM 6

Adjust window if necessary

$Y_2 = X + 3$

2nd TRACE  
: intersect

Find points of intersection.

$X = -3, X = -1, X = 1$

2nd OPTION: set the eq. equal to zero and find the ZEROS of the function.

$X^3 + 3X^2 = X + 3$   
 $-X \quad -X - 3$   
 $-3$

$X^3 + 3X^2 - X - 3 = 0$

$Y_1 = X^3 + 3X^2 - X - 3$

ZOOM 6

2nd TRACE  
ZEROS

ex2 Graph + Solve  $X^3 - 2X^2 = -3$

$X = -1$

$X^3 - 2X^2 + 3 = 0$

### ③ Factoring Quartic Trinomials

$$\textcircled{1} \quad x^4 - 2x^2 - 8 \quad \begin{array}{r} -8 \\ -4 \mid 2 \end{array}$$

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

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

diff. 2 squares

$$\textcircled{2} \quad x^4 + 7x^2 + 6$$

$$(x^2 + 6)(x^2 + 1)$$

$$\begin{array}{r} 6 \\ 1 \mid 6 \\ 3 \mid 2 \end{array}$$

$$\textcircled{3} \quad x^4 - 3x^2 - 10$$

$$(x^2 - 5)(x^2 + 2)$$

$$\begin{array}{r} -10 \\ -10 \mid 1 \\ -5 \mid 2 \end{array}$$

$$\textcircled{4} \quad x^4 + 8x^2 - 20$$

$$(x^2 + 10)(x^2 - 2)$$

$$\begin{array}{r} -20 \\ -20 \mid 1 \\ \phantom{-20} \mid \phantom{1} \end{array}$$

$$\textcircled{5} \quad x^4 - 16 =$$

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

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

Have to do  
diff. of 2  
squares  
twice

p. 3330 (6-9, 12-14, 23-26)