

Before we begin, are there any questions from last day's work?

Now Read pp.209-211 (Ex. 1-3)

Then complete:

- 1) 2.6.3 4
- 2) pp.212-214 #8, 10, 14bcd, 16, 17(a-d)

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) solve polynomial equations graphically, both with **and without** technology.

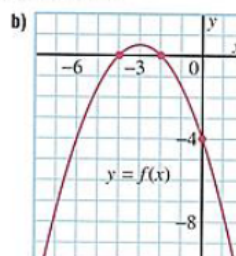
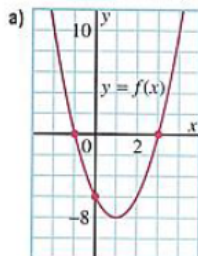
Worksheet 2.6.3 #5e

- e) Cubic with zeros at -1, -1, and 1 passing through (4, -150).

$$\begin{aligned}
 y &= a(x+1)^2(x-1) && (x, y) \\
 -150 &= a(4+1)^2(4-1) \\
 -150 &= a(5)^2(3) \\
 -150 &= 75a \\
 \frac{-150}{75} &= a \\
 a &= -2 && \therefore y = -2(x+1)^2(x-1)
 \end{aligned}$$

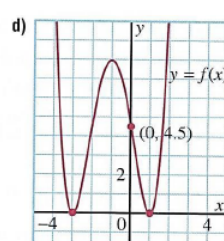
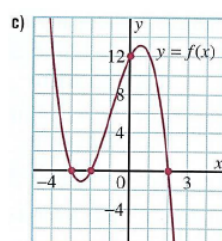
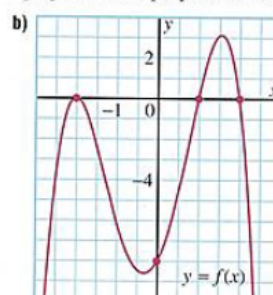
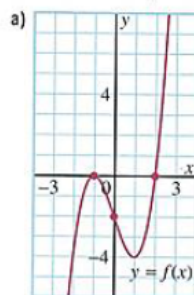
p.212 #10

10. Determine the equation of each quadratic function.



p.214 #17

17. Determine an equation to represent the graph of each polynomial function.



2.7.1: Solving Polynomial *Equations* Graphically

(using the corresponding polynomial function)

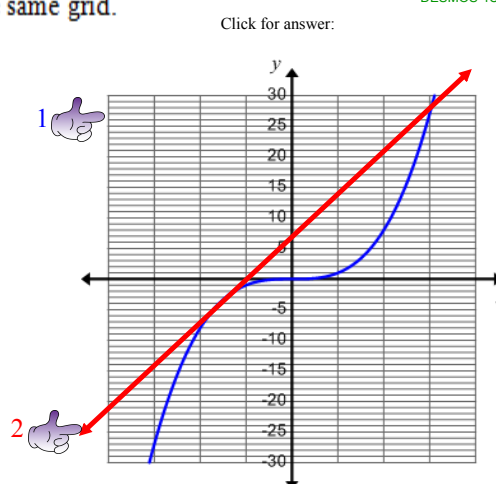
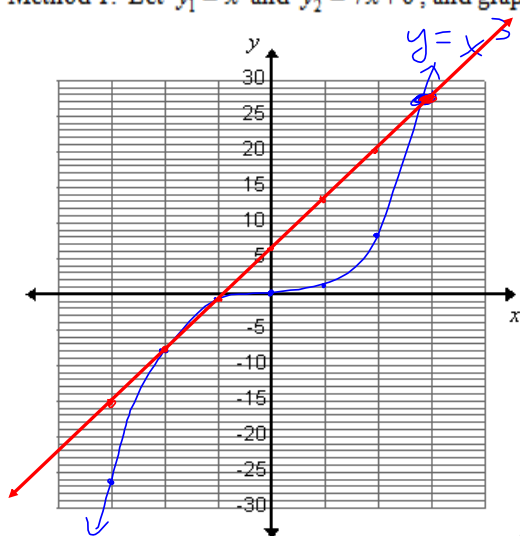
Date: Sept. 2 / 19

Recall: Solving an equation means determining the value(s) of the variable which make(s) the equation true. When solving graphically, the x values of the points of intersection are the roots (solutions) to the original problem.

Ex. 1 Given $x^3 = 7x + 6$. Solve graphically.

Method 1: Let $y_1 = x^3$ and $y_2 = 7x + 6$, and graph on the same grid.

DESMOS 4C 2.7.1 Lesson Methods 1 & 2



\therefore the solutions are $x = -2$, $x = -1$, and $x = 3$

Note: There is more than one choice when splitting the equation

We may have also chosen:

(Next page)

Method 2:

DESMOS 4C 2.7.1 Lesson Methods 1 & 2

Rearrange the equation to make one graph.

The zeros of the function are the roots (solutions) of the original equation.

$$x^3 = 7x + 6$$

$$x^3 - 7x - 6 = 0$$

$$f(x) = x^3 - 7x - 6$$

We'll use **desmos** to graph our new function, then find the zeros.

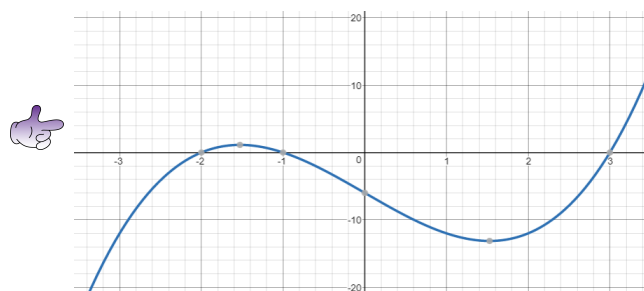
Use Window settings:

X-Axis [

$$-4 \leq x \leq 4$$

Y-Axis [

$$-30 \leq y \leq 30$$



Pull

\therefore the zeros of the function $y = x^3 - 7x - 6$ are:

$$x = -2, x = -1, \text{ and } x = 3$$

Today's homework:

pp.217-218 1, 2c, 3d, 4b, 6, 7

Simple Summary

