

## Today's Plan:

**Learning Target (standard):** I will graph polynomial functions using the 5-step process.

**Students will:** Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

**Teacher will:** Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

**Assessment:** Board work, homework check and homework assignment

**Differentiation:** Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.



Go over your 5-step process with  
someone around you!

\* QUIZ Thursday! \*



Solve and factor completely:

$$x^6 - 7x^3 - 8 = 0$$

$$(x^3 - 8)(x^3 + 1) = 0$$

$$(x-2)(x^2+2x+4)(x+1)(x^2-x+1) = 0$$

$$x^2+2x+1 = -4+1$$

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

$$x+1 = \sqrt{3}i, -\sqrt{3}i$$

$$x = -1 + \sqrt{3}i, -1 - \sqrt{3}i$$

$$x = \frac{1 \pm \sqrt{1-4(1)(1)}}{2(1)}$$

$$= \frac{1 \pm \sqrt{-3}}{2}$$

$$= \frac{1 + \sqrt{3}i}{2}, \frac{1 - \sqrt{3}i}{2}$$

$$(x-2)(x+1-\sqrt{3}i)(x+1+\sqrt{3}i)(x+1)(2x-1+\sqrt{3}i)(2x-1-\sqrt{3}i) = 0$$

$$x = 2, -1 + \sqrt{3}i, -1 - \sqrt{3}i, -1, \frac{1 + \sqrt{3}i}{2}, \frac{1 - \sqrt{3}i}{2}$$

For each polynomial, tell the degree, the MTP, the zeros and their multiplicity and whether the graph will cross or touch the x-axis at the zero, and the EB function with the behavior.

$$f(x) = 2(3x-1)^2(2x+7)^4 \quad 2 \cdot 9x^2 \cdot 16x^4 = 288x^6$$

degree: 6

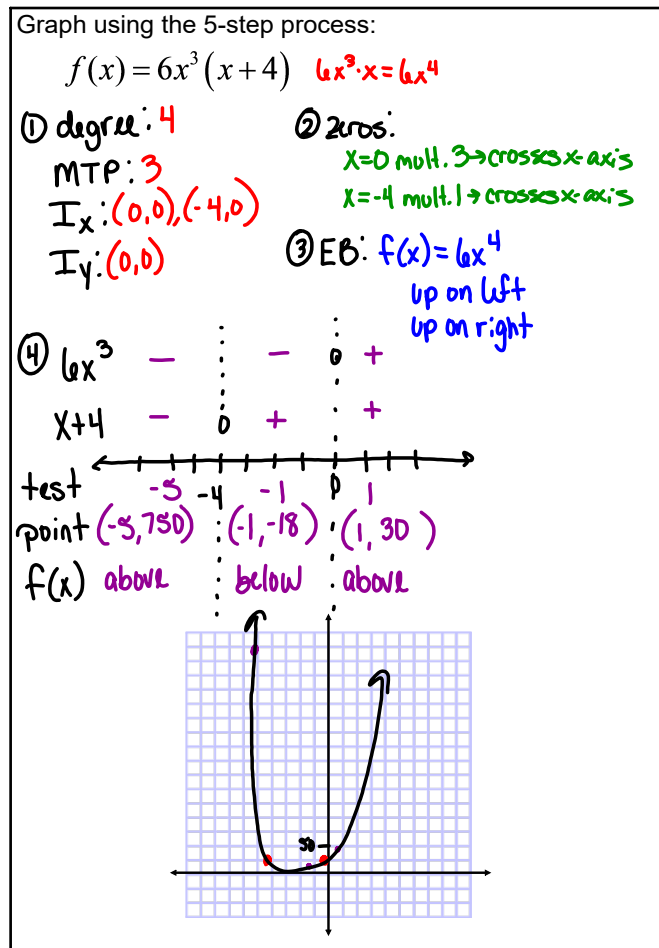
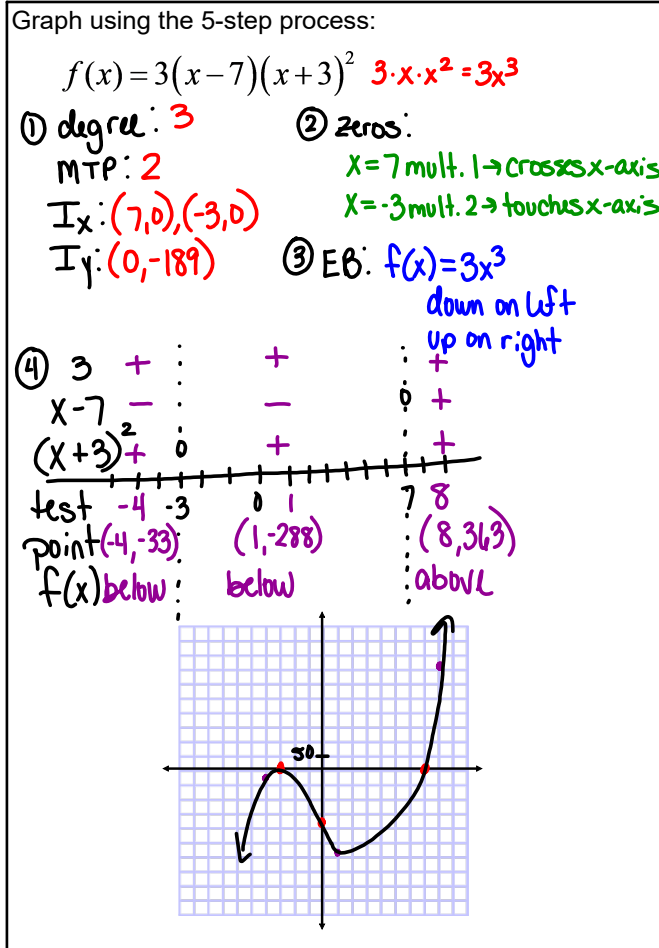
MTP: 5

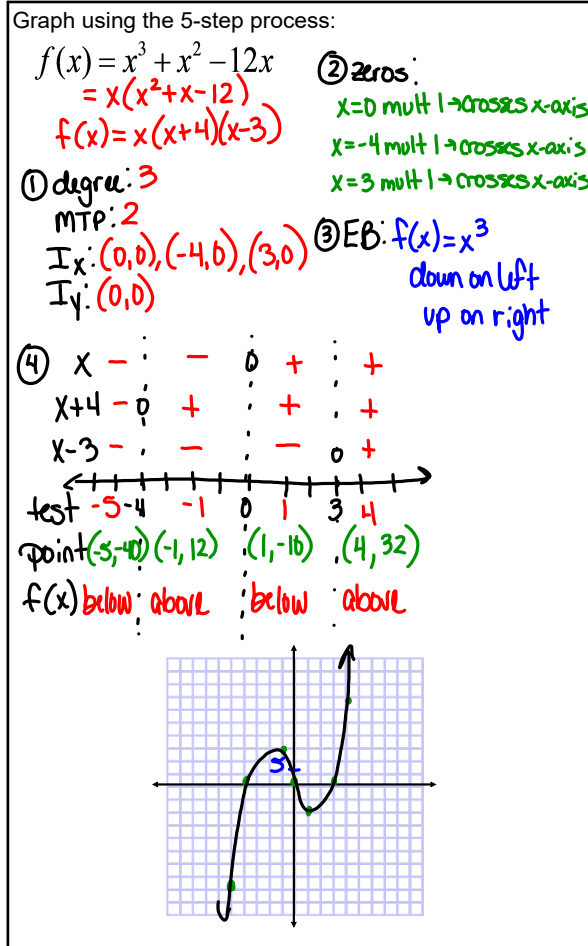
Zeros:  $x = \frac{1}{3}$  mult. 2  $\rightarrow$  touches x-axis

$x = -\frac{7}{2}$  mult. 4  $\rightarrow$  touches x-axis

EB:

$f(x) = 288x^6$  up on left  
up on right





Assignment:

\* QUIZ Thursday! \*

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\* Be sure to use graph paper! \*