

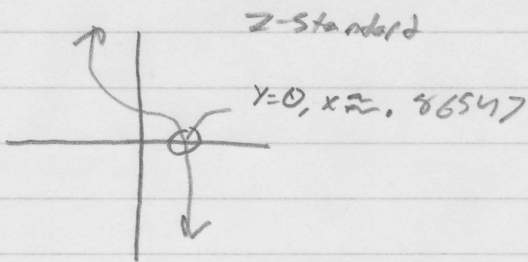
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2.4 #41

A) Prove  $\cos x = x^3$  has at least one zero.

1) solve for zero

$$\cos x - x^3 = 0$$



Since at  $y=0$ ,  $x$  has a value, the function has a zero

B) Find an interval length of .01 that contains a root.

Since we found the value of the root in part A,  
we just pick an interval of .01 that contains the  
root.

$$f(.086) \text{ and } f(.087)$$

According to the Intermediate Value Theorem,  
the root exists in the interval.