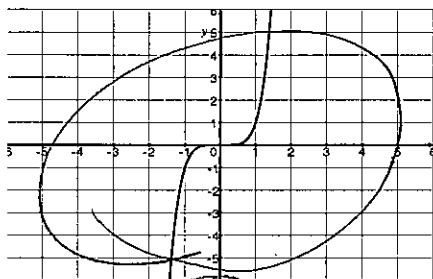


Key

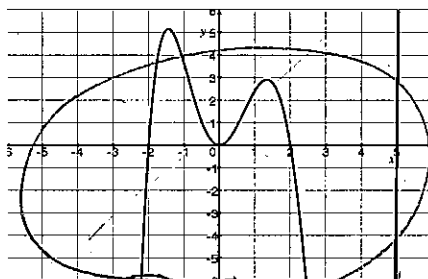
## Quiz 2

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

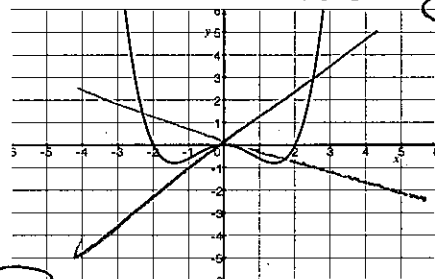
1. [2] (polynomial wks #9) Which of the following could be the graph of a fifth degree polynomial. Circle all that could work and cross out those that could not.



(+1.5)



(+1.5)



(+1.5)

end behavior suggests even degree polynomial

reasoning +1.5

2. [3] (A.2 #74) Completely factor  $2x^3 + 3x^2 - 11x - 6$  given that 2 is a root.

(+1) Since 2 is a root,  $x-2$  is a factor.

(+1.5) { we want to write  $2x^3 + 3x^2 - 11x - 6 = (x-2) \cdot ?$   
To find ? we use long division

(+1) 
$$\begin{array}{r} 2x^2 + 7x + 3 \quad R0 \\ x-2 \overline{) 2x^3 + 3x^2 - 11x - 6} \\ \underline{-(2x^3 - 4x^2)} \phantom{- 6} \\ 7x^2 - 11x - 6 \\ \underline{-(7x^2 - 14x)} \phantom{- 6} \\ 3x - 6 \\ \underline{-(3x - 6)} \\ 0 \end{array}$$

so

$$2x^3 + 3x^2 - 11x - 6 = (x-2)(2x^2 + 7x + 3)$$

(+1.5) 
$$= (x-2)(2x+1)(x+3)$$

3. Let  $g$  be the function whose graph is shown to the right.

(a) [1] What is the domain of  $g$ ?

$(0, \infty)$

(b) [2] (§3.2 #62) Find the function of the form  $g(x) = \log_b(x)$ .

(+S) passes thru  $(4, 1)$

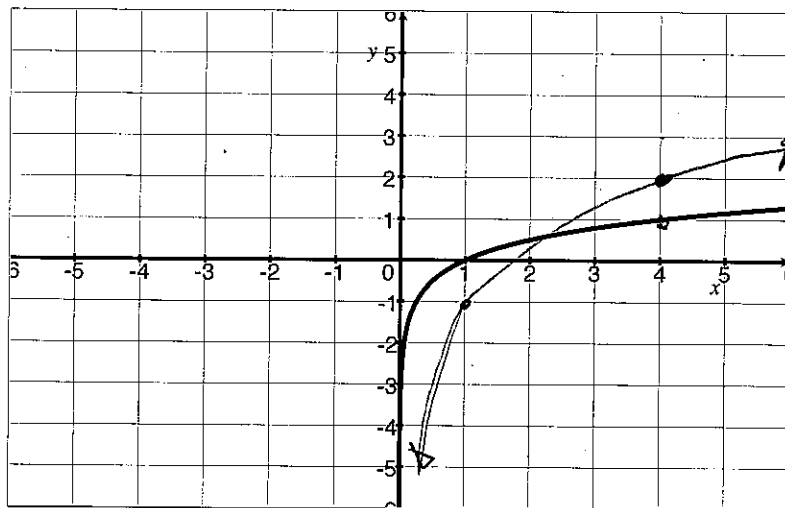
so

(+S)  $\log_b 4 = 1$

(+S)  $\Leftrightarrow b^1 = 4$  so  $b = 4$

$$g(x) = \log_4 x$$

got it/rotation (+S)



(c) [2] (WebHW7 #14) Sketch the graph of  $3g(x) - 1$

(+S)

vertical stretch by 3/

multiply coord by 3

then

shift down one unit (+S)

order (+S)

got it (+S)