

# GROUP QUIZ 4 QUESTIONS

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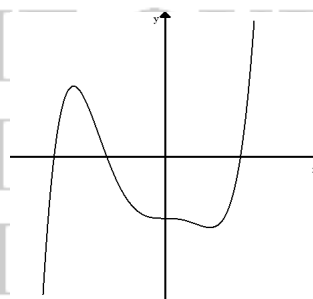
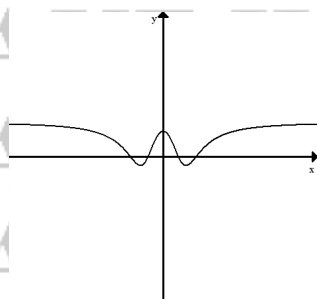
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- [1] Find the derivatives of the following functions using the definition of the derivative.  
HINT: TRY BOTH DEFINITIONS TO FIND THE EASIER ONE TO USE.  
DO NOT USE THE DIFFERENTIATION SHORTCUTS IN CHAPTER 3.

[a]  $f(x) = \frac{1}{\sqrt{x^2 + 1}}$

[b]  $f(x) = \frac{x+1}{\sqrt{x}}$

- [2] Sketch the derivative of the following functions on the same set of axes.



- [3] Find a power function such that
- [a] the tangent line at  $(1, 2)$  has x- and y-intercepts that have the same numerical value.
- [b] the tangent line at  $(1, 3)$  has x- and y-intercepts that have opposite numerical values (negatives of one another).

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