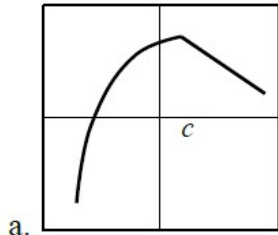


Name \_\_\_\_\_

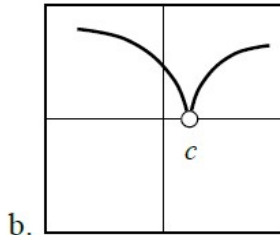
Period \_\_\_\_\_

## Differentiability

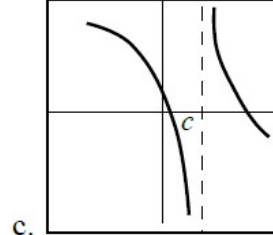
1.) For the following graphs of  $f(x)$ , state whether the function is continuous, differentiable, both or neither at  $x = c$ .



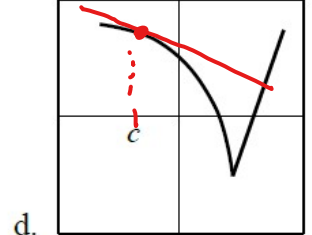
a.) continuous



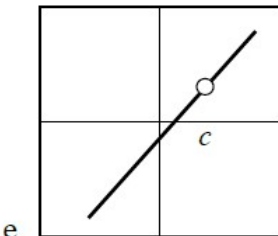
b.) neither  
(discontinuous)  
(Hole)



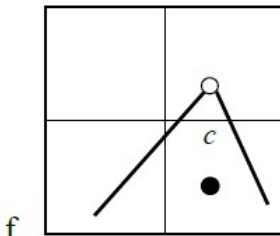
c.) neither  
(discontinuous)  
(V A)



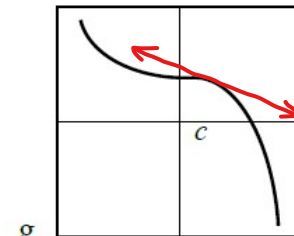
d.) differentiable  
and  
continuous  
(Smooth curve)



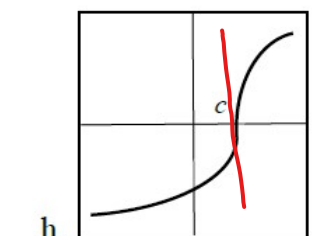
e.) neither



f.) neither



g.) both



h.) continuous  
(Vertical  
tangent)

2.) Sketch a function having the following attributes.

- a.) is differentiable and continuous at the point  $(2,4)$
- c.) has a cusp at the point  $(-1, 3)$

- b.) is continuous at  $(-3,1)$ , but not differentiable there
- d.) is differentiable at  $(2,-4)$ , but not continuous there

