APMA 2120 Multivariable Calculus **Name:**_____
Pre-Class Questions

1. Find all four second partial derivatives of $f(x,y) = \frac{x}{y}$.

   a. $f_{xx}(x,y)$

   b. $f_{xy}(x,y)$

   c. $f_{yy}(x,y)$

   d. $f_{yx}(x,y)$

2. Which of the following means the same thing as $g_{yx}(x,y)$?

   (i) $\frac{\partial^2 g}{\partial x\, \partial y}$ (ii) $\frac{\partial^2 g}{\partial y\, \partial x}$

3. How many possible <u>third</u> partial derivatives would a function of two variables have?

4. How many possible second partial derivatives would a function of <u>three</u> variables have?