MAC 2311 Hybrid Calculus I

Name Quiz # 11 **4.3-4.4** Take-Home. Show all your work.

1. Make a rough sketch of $y=\frac{(x-1)^{2}}{x^{2}+1} $by answering a) through d)

1. domain: ­­­\_\_\_\_\_\_\_\_\_\_ *x*intercept(s): ­­­\_\_\_\_\_\_\_\_\_*y*intercept: ­­­\_\_\_\_\_\_\_\_\_symmetry (if any): ­­\_\_\_\_\_\_\_\_\_\_\_\_

 vertical asymptote(s)\_\_\_\_\_\_\_\_­­­\_\_\_\_\_horizontal asymptote(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Critical point(s) (*x*,*y*): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Intervals where *y* is increasing \_\_\_\_\_\_\_\_\_\_\_decreasaing \_\_\_\_\_\_\_\_\_\_ Show sign chart.
3. Intervals where *y* is concave up \_\_\_\_\_\_\_\_\_\_Concave down \_\_\_\_\_\_\_\_\_\_ Show sign chart.
4. Inflection point(s) ( if any) \_\_\_\_\_\_\_\_\_\_
5. Graph (lable all points):

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Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Find the minimum distance between the curve $y=1-x^{2}$ and the point (3, 1). Check that your answer is a maximum.

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