

MATH 150 Autumn 2005 Pre-Calculus

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Quiz 2

Name: KEY

1. Let $f(x) = \frac{3x}{x^2 - 1} = \frac{3x}{(x-1)(x+1)}$

[a] (3 points) Determine the domain and intercepts and test for symmetry.

[b] (4 points) Determine all the asymptotes (vertical, horizontal, oblique).

[c] (3 points) Sketch the graph, making sure to include all the information found in parts a) and b). (If the graph you sketch do not match the information given in the previous parts, then it will be assumed that you copied it from the calculator.)

(a) $\text{Dom}(f) = \text{everything but } x=1, -1 = (-\infty, -1) \cup (-1, 1) \cup (1, \infty)$

$x\text{-int} = x=0 = \underline{y\text{-int.}}$
(0,0)

$f(-x) = \frac{3(-x)}{(-x)^2 - 1} = \frac{-3x}{x^2 - 1} = -\frac{3x}{x^2 - 1} = -f(x)$ odd
(symmetric wrt origin)

(b) V.A.: $x=1, x=-1$

H.A.: $y=0$

O.A.: NONE

