Saint Louis University
Madrid Campus

MATH Placement Test - B

Name _____

EXAM INSTRUCTIONS

- Your cell phone must be off. You cannot use a calculator.
- You must show all your work. Work neatly. Poor presentation might result on an F.

1. Find the domain of the following functions, expressing your answer using the interval notation:
   a. $f(x) = \sqrt{3x+5}$

   b. $f(x) = \dfrac{3x^2(2x-5)}{6x(3x+1)(2x-5)}$

   c. $f(x) = \sqrt{(x+1)(x-2)}$

   d. $f(x) = 3+4\ln(2x-1)$

2. Given the function $f(x) = \dfrac{3x^2+2}{x(x-1)}$, find
   a. Domain

   b. The x and y intercepts

   c. Vertical and horizontal asymptotes

3. Solve the following equations:
   a. $x^4 - x^2 = 0$

   b. $\log(3x + 2) = 3$

   c. $3^{5x-1} = 9$

4. Given the function $f(x) = (x-2)^2(x+3)x$, write the intervals on which *f(x)* is positive and on which *f(x)* is negative (use interval notation).

5. Find the equation of the line with slope equal to 2/3 and passing through the point (2,-1)