PRACTICE EXAM 1 - MATH 140

DATE: Friday, September 15

INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. Each question is worth 5 points. It is necessary to show your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

1. (a) Solve $x^2 - 11x + 18 = 0$ by factoring. (2 points)
   (b) Solve $(5x - 1)^2 = 9$ by the Square Root Method. (1 point)
   (c) Solve $7 - 3x \leq -2$ and express the solution in interval notation. (2 points)
2. (a) Find the length of the straight line segment with endpoints $(-1, 4)$ and $(3, -5)$. (3 points)
   (b) Find the midpoint of the straight line segment with endpoints $(-7, 19)$ and $(-2, -3)$. (2 points)
3. (a) Find two points on the graph of the equation $y = -2x + 6$. (1 point)
   (b) Sketch the graph of the equation $y = -2x + 6$ using the points that you found in the previous part. (2 points)
   (c) Find the x- and the y-intercepts of the graph of $y = -2x + 6$. (2 points)
4. (a) Test the equation $y = \frac{x}{x^3-3}$ for symmetry with respect to the origin. (2 points)
   (b) Graph the equation $(x - 1)^2 + y^2 = 9$. (1 point)
   (c) Find the center and the radius of the circle with equation $x^2 + y^2 - x + 2y + 1 = 0$. (2 points)
5. (a) If $f(x) = \frac{x^2-1}{x+4}$ find $f(x + 1)$. Simplify your answer. (2 points)
   (b) Find the domain of $f(x) = \frac{x-2}{x^3-x}$. (3 points)