MATH 130 QUIZ 2 (Sect. 3.1-3.2) 09/19/2011

Name_____KEY_____ Section 0242

Answer all problems. There are 10 possible points.

1. (6pts) Use the properties of limits to determine if the following limits exist. If it exists, find its value:

   a) $\lim_{x\to 7}\dfrac{x^2-4x-21}{x-7}$

$$\lim_{x\to 7}\frac{x^2-4x-21}{x-7}=\lim_{x\to 7}\frac{(x-7)(x+3)}{(x-7)}=\lim_{x\to 7}(x+3)=7+3=10.$$

   b) $\lim_{x\to -\infty}\dfrac{9x+7}{2x-5}$

$$\lim_{x\to -\infty}\frac{9x+7}{2x-5}=\lim_{x\to -\infty}\frac{\frac{9x}{x}+\frac{7}{x}}{\frac{2x}{x}-\frac{5}{x}}=\frac{\lim_{x\to -\infty}\frac{9x}{x}+\lim_{x\to -\infty}\frac{7}{x}}{\lim_{x\to -\infty}\frac{2x}{x}-\lim_{x\to -\infty}\frac{5}{x}}=\frac{9+0}{2+0}=\frac{9}{2}.$$

2. (4pts) Find all the values of x where the function $f(x)=\dfrac{5+x}{x(x-1)(x+5)}$ is discontinuous:

f is discontinuous at $x=0,1,-5$ since $f(x)=\dfrac{5+x}{x(x-1)(x+5)}$ has denominator equals 0 at the three values.

I authorize to make my course grades publicly available online. Names will remain confidential. The grades will be identified with the four last digits of the student's ID.

Signature_____