Quiz 2A - Math 1410

Name: _____

1) (6 points) Use the definition of the derivative to find $f'(x)$ if $f(x) = \dfrac{1}{2x+7}$

2) (4 points) Sketch a graph of the function $f(x)$ if the following conditions hold:

• $f(0) = 3$.

• $\lim\limits_{x \to -\infty} f(x) = 0$ and $\lim\limits_{x \to \infty} f(x) = -2$.

• $\lim\limits_{x \to 2^-} = -\infty$ and $\lim\limits_{x \to 2^+} = \infty$.

• $f'(x) > 0$ on the interval $(-\infty, -1)$.

• $f'(x) < 0$ on the intervals $(-1, 2)$ and $(2, \infty)$.

• f has only one vertical asymptote.