HW 6

2.5 #2 $\lim_{x \to 0^-} f(x) = 0$

$\lim_{x \to 0^+} f(x) = 0$

$\lim_{x \to 0} f(x) = 0 = f(0)$

B

#6 $f(0) = -1$

$f(1) = 4$

$-1 < 0 < 4$ & $f(x)$ is continuous on $[0,1]$

B

by E (textbook P118).

#10 $x - 8 > 0 \Rightarrow x > 8$

B

2.6 # 2 slope $= \lim_{h \to 0} \frac{f(-3+h) - f(-3)}{h} = \lim_{h \to 0} \frac{4}{11(11-4h)} = \frac{4}{121}$

@ point $\left(-3, \frac{1}{-1-4(-3)}\right) = \left(-3, \frac{1}{11}\right)$

line: $y - \frac{1}{11} = \frac{4}{121}(x+3) \Rightarrow y = \frac{4}{121}x + \frac{23}{121}$

~~$11y - 1 = 4x + 12$~~

~~$4x - 11y + 13 = 0$~~

#9 $$\lim_{h \to 0} \frac{f(0+h) - f(0)}{h}$$

$$= \lim_{h \to 0} \frac{h^3 + 4h - 25 + 25}{h}$$

$$= \lim_{h \to 0} h^2 + 4$$

$$= 4.$$