

#1, 3-10, 13, 19, FR #2

AP Exam HW p. AP2-1

hole
↓

$$\textcircled{1} f(3) = 6 \quad \lim_{x \rightarrow 3} \frac{(x+3)(\cancel{x-3})}{\cancel{x-3}} = \lim_{x \rightarrow 3} x+3 = 6$$

$f(x)$ is cont. B

$$\textcircled{3} \lim_{h \rightarrow 25} \frac{\sqrt{h}-5}{(\sqrt{h}+5)(\sqrt{h}-5)} = \lim_{h \rightarrow 25} \frac{1}{\sqrt{h}+5} = \frac{1}{10} \quad \text{C}$$

④ Avg. Rate = Slope pts. (-2, 1) (4, 15)

$$\frac{15-1}{4-(-2)} = \frac{14}{6} = \frac{7}{3} \quad \text{D}$$

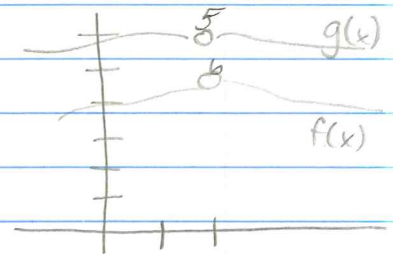
⑤ $\lim_{x \rightarrow 2} f(x) = 5$ pt (2, 5) open or closed

$\lim_{x \rightarrow 2} g(x) = 6$ pt (2, 6) open or closed

I not necessarily II does not have to be

III ~~yes true~~ what if it DNE?

E



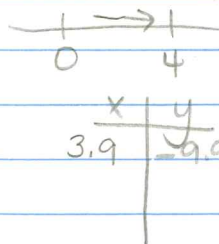
⑥ $f(2) = 20$ $f(6) = 10$

must have y values between 10 and 20

I do you know? II true III don't know

B

$$\textcircled{7} \lim_{x \rightarrow 4^-} \frac{(x+6)}{(x-4)(x-2)} = -\infty \quad \text{E}$$



$$\frac{3.9+6}{(3.9-4)(3.9-2)} = \frac{9.9}{(-)(+)}$$

$$\textcircled{8} \lim_{x \rightarrow -\infty} \frac{3x+2}{\sqrt{x^2+4}} = -3 \quad \boxed{B}$$

$$\frac{3x}{x}$$

$$\textcircled{9} \quad \boxed{C}$$

$$\textcircled{10} \quad \boxed{A}$$

$$\textcircled{B} \quad \boxed{D}$$

$$\textcircled{19} \lim_{x \rightarrow 0^-} 4-x = 4 \quad \lim_{x \rightarrow 0^+} x+1 = 1 \quad \boxed{E}$$

$$\textcircled{2} \lim_{x \rightarrow 5} \frac{(x-5)(x-2)}{(x+5)(x-5)} = \frac{3}{10}$$

$x=5$ is a removable discontinuity because $\lim_{x \rightarrow 5} f(x) = \frac{3}{10}$

$x=-5$ is an infinite discontinuity because
the $\lim_{x \rightarrow -5} f(x)$ DNE

b. HA $y=1$ $\lim_{x \rightarrow \infty} f(x) = 1$

c. $A = 3/10$ d. No