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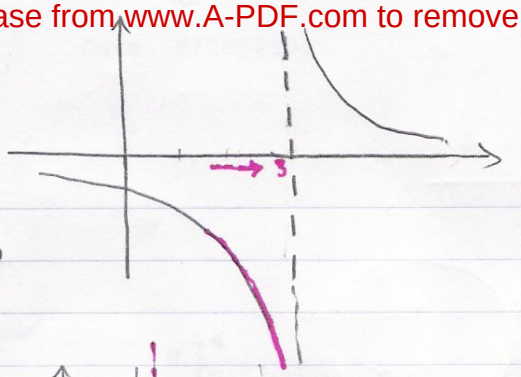
1.2 #14. $\lim_{x\to 3} \frac{1}{x-3}$

↓

does not exist

because $\lim_{x\to 3^-} \frac{1}{x-3} \to -\infty$

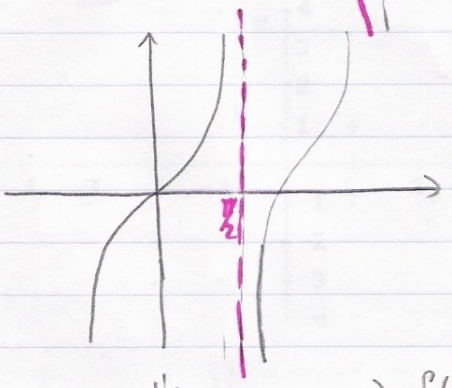


#18. $\lim_{x\to \frac{\pi}{2}} \tan x$

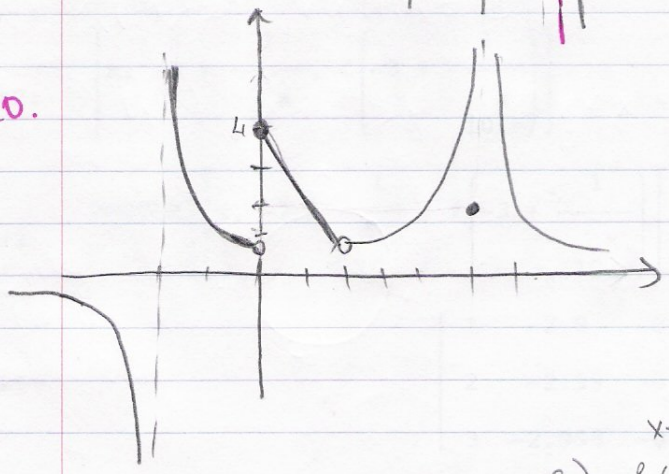
↓

does not exist.

because $\lim_{x\to \frac{\pi}{2}^-} \tan x \to \infty$.



#20.



a) $f(-2)$ is not defined.

b) $\lim_{x\to -2} f(x)$ does not exist because $\lim_{x\to -2^-} f(x) \to -\infty$

c) $f(0) = 4$

d) $\lim_{x\to 0} f(x)$ does not exist because $\lim_{x\to 0^-} f(x) = \frac{1}{2}$ which is not equal to $\lim_{x\to 0^+} f(x) = 4$

e) $f(2)$ is not defined

f) $\lim_{x\to 2} f(x) = \frac{1}{2}$ because $\lim_{x\to 2^-} f(x) = \lim_{x\to 2^+} f(x) = \frac{1}{2}$

g) $f(4) = 2$

h) $\lim_{x\to 4} f(x)$ does not exist because $\lim_{x\to 4^-} f(x) = \infty$.

#26.

$f(-2) = 0$

$f(2) = 0$

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

$\lim_{x\to 2} f(x)$ does not exist.