

(a): Compute the following limit if it exists, and if it does not exist but is infinite, describe the infinite limit and explain (factor the denominator):

$$\lim_{x \rightarrow -1^-} \frac{x-2}{x^2-3x-4} = \frac{x-2}{(x-4)(x+1)}$$

$$= \frac{-3}{-5(0)} = -\infty$$

Need  
lim here still  
 $x \rightarrow -1^-$

Correct answer, need more detail though!

But negative

right idea, explain a bit more!

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Cannot do this (substitution), since division by 0 is not defined

(b): Compute the following limit (if it exists), making your steps clear:  $\lim_{x \rightarrow 0} \sqrt[5]{\frac{x^3-1}{3x^2+2x+1}}$

$$= \sqrt[5]{\frac{0^3-1}{3(0^2)+2(0)+1}}$$

$$= \sqrt[5]{\frac{-1}{1}}$$

$$= \sqrt[5]{-1}$$

~~Does not exist?~~

It exists, and is equal to -1.

Why can you directly substitute?  
Give some step here.

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↑  
-1  
since  
 $(-1)^5 = -1$