King **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 131 Math 101 (09) Quiz#1 (2.1, 2.2, & 2.3)
Family Name: S.r#

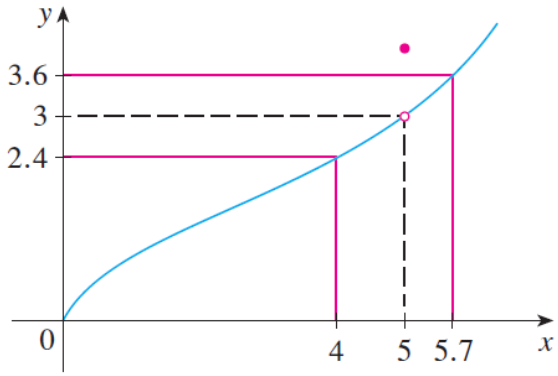
Q1. Find the of $f(x) = x + \sqrt{|x| + 3}$ over $[-1,1]$

Q2. Evaluate the following limits

i. $\lim_{x\to 1} \dfrac{x^2 + x - 1}{x + 1}$

ii. $\lim_{x\to 1} \dfrac{\sqrt{x} - 1}{\sqrt{|x| - 1}}$

Q3. Use the graph of $y = f(x)$ to find $\delta > 0$, such that
if $|x - 5| < \delta$ then $|f(x) - 3| < 0.6$



Q4. Bonus:

$\lim_{x\to 0} \dfrac{\cos(2x) - 1}{\cos x - 1}$

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Department of Mathematics & Statistics
Term 131 Math 101 (16) Quiz#1 (2.1, 2.2, & 2.3)
Family Name: S.r#

Q1. Find the average rate of change of $f(x) = |x| - x$ over $[-1,1]$

Q2. Evaluate the following limits

i. $\lim_{x\to 0} \dfrac{5x^2 + 3x^3}{x^2 + 2x^4}$

ii. $\lim_{x\to 0} \dfrac{x+1}{cosx}$

Q3. Prove that, $\lim_{x\to 1}(3x - 1) = 2$

Q4. Bonus:

$\lim_{x\to 0} \dfrac{\cos(2x) - 1}{\cos x - 1}$