

King Fahd University of Petroleum and Minerals
Math. & Stat. Departement
QUIZ # 5

Name	ID	SEC	Sr
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Q1)

a) Use linear approximation to estimate the value of $\cos 61^\circ$

b) One side of a right traingle is known as 20 cm long and the opposite angle is measured as 30° , with a possible error of $\mp 1^\circ$. Use differential to estimate the error in copmuting the length of the hypotenuse.

Q2) a) Find the slope of the tangent line to the curve $f(x) = \ln(\cosh x)$ at $x = \ln 2$.

Q3) Find the absolute maximum and absolute minimum of $f(x) = x + \cot\left(\frac{x}{2}\right)$, $[\pi/4, 7\pi/4]$.

Q4) If $f(1) = 6$ and $f'(x) \geq 4$ for $1 \leq x \leq 10$, how small can $f(10)$ be?