

APK  
Exam 1  
2004-10-25

1. Sketch the graph of the function  $f(x) = |x^2 - 2|x| + 1|$ .
2. Determine the limit  $\lim_{x \rightarrow 0} \frac{x}{\sqrt{1+x} - \sqrt{1-x}}$ .
3. Find those points on the curve  $2yx - x - y + 1 - y^2 + x^2 = 0$  at which the slope of the tangent line is 1.
4. Show that  $\sqrt[3]{x} \leq \frac{x}{3} + \frac{2}{3}$  for  $x \geq 1$ .