

King Fahd University of Petroleum and Minerals

Department of Mathematics

Mid-Term Lab code (001)

Name	ID	Sec
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Q1)  $\lim_{x \rightarrow 101243} \frac{x-101243}{(x^2-10250145049)(x+1012435)} =$

- a)  $3.4345 * 10^{-11}$                       b)  $4.4345 * 10^{-10}$                       c)  $4.4345 * 10^{-12}$                       d)  $3.4345 * 10^{-12}$

Q2)  $\lim_{x \rightarrow 1014^+} \lfloor x^3 + 1 \rfloor$

- a) 1042590744                      b) 1042689730                      c) 1032689730                      d) 1022590733

Q3) let  $f(x) = x^{10}$ , then  $f^{(8)}(0.002) =$

- a) 6.2567                      b) 7.3245                      c) 6.2354                      d) 7.2576

Q4) The position of a particle moving in a straight line is given by  $s(t) = e^t - \ln t$ , find the velocity at  $t = 2.1$

- a) 7.24                      b) 7.69                      c) 7.13                      d) 7.11

Q5) The number of points for which  $f(x) = ||x^2 - 1| - 1|$  is not differentiable is

- a) 4                      b) 5                      c) 6                      d) 3

Q6) Let  $f(x) = \sec x + \tan x$  and  $g(x) = f^{(4)}(x)$ , then  $g\left(\frac{\pi}{4}\right) =$

- a) 150.6                      b) 140.2                      c) 160.6                      d) 155.4

Q7)  $\lim_{x \rightarrow \infty} x - \ln(x^3 - 5x^2 + 1) =$

- a) 4                      b) 3                      c)  $-\infty$                       d)  $\infty$

Q8)  $\lim_{x \rightarrow 1} \frac{\sin(x-1)}{x^{100}-1} =$

- a) 100                      b) 0.03                      c) 0.01                      d) 1