

King Fahd University of Petroleum & Minerals
 Department of Mathematics & Statistics
Math101-Term072-Quiz-One

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Q.1. Find a number δ such that $|f(x) - 3| < 0.02$ whenever $0 < |x + 2| < \delta$, where $f(x) = 2x + 7$

Q2. Let $f(x) = \begin{cases} a + bx, & \text{if } x > 2 \\ 3, & \text{if } x = 2 \\ b - ax^2, & \text{if } x < 2 \end{cases}$ Determine the values of constants a and b so that $f(x)$ is continuous at $x = 2$

Q.3 consider the following graph of the function $y = f(x)$.

Answer the following:

- a. $\lim_{x \rightarrow -5^-} f(x) =$
- b. $\lim_{x \rightarrow -5^+} f(x) =$
- c. $\lim_{x \rightarrow 1^-} f(x) =$
- d. $f(1) =$
- e. $f(4) =$
- f. The discontinuity points are:
- g. Which one of the discontinuity points is **removable**? Why?

