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MATH-101 Term-131 IN-Class-QUIZ-3

1) Let $y = g(x) = x^2 - \frac{1}{x}$. Use limits to find the instantaneous rate of change of y with respect to x at $x = 1$.

2) For what values of a, b, and c is $f(x)$ continuous on the closed interval [2, 4].

$$f(x) = \begin{cases} c & if \quad x = 2 \\ ax - b & if \quad 2 < x < 3 \\ 2 & if \quad x = 3 \\ \frac{a}{3}x + b & if \quad 3 < x \le 4 \end{cases}$$