

King Fahd University of Petroleum and Minerals  
Math 001  
Quiz#5B (2.6,3.1)

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Name: \_\_\_\_\_, ID#: \_\_\_\_\_,  
Sec#: \_\_\_\_\_

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1-If  $f(x) = \sqrt{x+3}$  and  $g(x) = \frac{\sqrt{25-x^2}}{x+1}$ , then the domain of  $\left(\frac{f}{g}\right)(x)$  is

- a)  $(-5, 5)$     b)  $(-3, 5)$     c)  $(-1, 5)$     d)  $[-3, -1) \cup (-1, 5)$     e)  $(-5, -3] \cup (-1, 5)$

2-If  $f(x) = \begin{cases} \frac{1}{5}([x]-1), & \text{if } x \leq -1 \\ 1-[x], & \text{if } x > -1 \end{cases}$ , where  $[]$  is the greatest integer function, then the value of  $(f \circ f)\left(-\frac{3}{2}\right)$  is equal to

- a) 0.2    b) 0.36    c) 2    d) -0.2    e) 0

3- If  $g(x) = 1 - x^3$  and  $(g \circ f)(x) = 1 - 2x - x^2$ , then  $f(2)$  is equal to

- a) 3    b) -2    c) 2    d) 1    e) -5

4- If  $x-2$  is a factor of the polynomial  $x^3 - 5x^2 + 7x + k$ , then  $k$  is equal to

- a) 14    b) -2    c) 2    d) -42    e) 42

5-If  $x^4 + 2x^3 - 2x - 2 = (x-1)(x+1)g(x) - 1$ , then  $g(x)$  is

- a)  $x^2 - 2x - 1$     b)  $x^2 - 2x + 1$     c)  $-x^2 + 2x + 1$     d)  $x^2 + 2x - 1$     e)  $x^2 + 2x + 1$