

**Monthly Test 1**

**Math 1050**

**Total score : 20**

**Credit : 20 %**

**Duration : 1 hour**

**Kingdom of Saudi Arabia**

**Ministry of Higher Education**

**Salman bin Abdulaziz University**

**Preparatory Year Deanship**

**Basic Sciences Department**

 Test Booklet

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| Questions Number | Score |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |
| **Total** |  |

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| --- | --- |
| **Name:** |  |
| **Student No:** |  |  |  |  |  |  |  |  |  |
| **Section No:** |  |
| **Group:** |  |
| **Instructor’s Name:** |  |

**This test booklet contains 4 pages**

1) **(a)** In each part of the accompanying figure , determine whether the graph defines

 $y $ as a function of $x$ . [ 3 ]







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**(b)** Solve$\left| x-\frac{1}{2} \right|\leq \frac{3}{2}$and graph its solution **.** [ 2 ]

 **(c)** Let $f\left(x\right)= \sqrt{x+1}$ and $g\left(x\right)= x^{2}+6 $ , evaluate $\left(fog\right)\_{\left(-3\right) } $and $\left(gof\right)\_{\left( 3 \right) }$ . [ 2 ]

**(d)** Find the domain and the range of the function $ f\left(x\right)=2+\sqrt{x-1 } $ **.** [ 3 ]

2) **(a)** Compute the following limits.

 **1)** $ \_{x\rightarrow 0}^{lim} \frac{\sin(x)}{3x}$ [ 2 ]

 **2)** $\_{x\rightarrow -6}^{lim} \frac{x^{2}+4x-12}{x+6}$ [ 2 ]

 **3)** $\_{x\rightarrow \infty }^{lim} \frac{4x^{5}+ x^{2} -3}{x^{5}-1}$ [ 2 ]

 **(b)** Show that the following functionis continuous at$x=4$ **.**

 $f\left(x\right)=$$\left\{\begin{array}{c} \frac{x+ 6}{x+1} , x <4\\\\ x-2 , x\geq 4\end{array}\right.$[ 4 ]

**With my best wishes**