

MATHEMATICS DEPARTMENT  
MATH 1411 -Quiz 1-  
First Semester 2021/2022

5 Key

Name (Arabic)..... Number..... Section.....14D.....

Q1) The range of the function  $f(x) = \sqrt{9 - x^2}$  is

1.  $(-\infty, -9)$
2.  $(-3, 3)$
3.  $(9, \infty)$
4.  $[0, 3]$

Q2) If  $f$  and  $g$  are odd functions, then the  $f * g$  is

1. even
2. odd
3. odd and even
4. neither odd nor even

Q3)  $\lim_{x \rightarrow 0} \frac{1 - \sin(x)}{2 \cos x}$

1.  $\frac{1}{2}$
2.  $\infty$
3. 0
4. 1

$$\frac{1 - 0}{2(1)}$$

Q4) The graph of  $f(x) = \frac{2x}{x+1}$  has

1. an oblique asymptote  $y = x + 1$
2. a vertical asymptote  $x = -2$
3. horizontal asymptote at  $y = 2$

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key

Name (Arabic)..... Number..... Section.....14D.....

Q1) The range of the function  $f(x) = \sqrt{4 - x^2}$  is

1.   $[0, 2]$
2.  $(-2, 2)$
3.  $(2, \infty)$
4.  $(-\infty, -2)$

Q2) If  $f, g$  are functions such that  $f$  is odd and  $g$  is even, then the function  $f * g$  is

1. even
2.  odd
3. odd and even
4. neither odd nor even

Q3)  $\lim_{x \rightarrow 0} \frac{1 - \sin(x)}{\cos x}$

$$\frac{1 - 0}{1} = 1$$

1.  $\frac{1}{2}$
2.  $\infty$
3.  0
4.  1

Q4) The graph of  $f(x) = \frac{x^2}{x+1}$  has

1. no oblique asymptote
2.  a vertical asymptote  $x = -1$
3. horizontal asymptote at  $y = 2$

5 key 2

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• Name (Arabic)..... Number..... Section.....16D.....

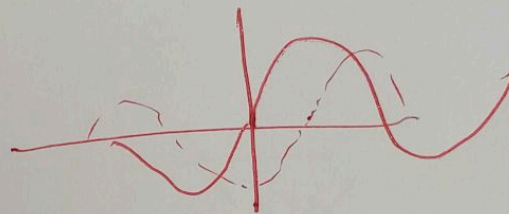
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Q1) The domain of the function  $h(x) = \frac{1}{x^2-4}$  is

1.  $(-2, 2)$
2.  $(-\infty, \infty) / \{-2, 2\}$
3.  $(-\infty, -2) \cup (2, \infty)$
4.  $(0, \infty)$

Q2) The graph of the function  $y = \sin(x - \frac{\pi}{2})$  is symmetric about

1. x- axis
2. origin
3. y- axis
4. none



Q3)  $\lim_{x \rightarrow 0} \frac{\tan x}{3x}$

1.  $\frac{1}{3}$
2.  $\infty$
3. 0
4. 3

Q4) The graph of  $f(x) = \frac{x^2}{x+1}$  has

1. an oblique asymptote  $y = x + 2$
2. a vertical asymptote  $x = 2$
3. no horizontal asymptote

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5 key form!

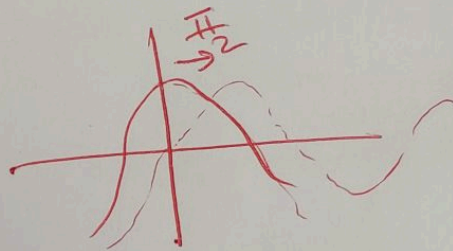
Name (Arabic)..... Number..... Section.....16D.....

Q1) The domain of the function  $h(x) = \frac{1}{x^2+4}$  is

1.  $(-2, 2)$
2.  $(0, \infty)$
3.  $(-\infty, -2) \cup (2, \infty)$
4.  $(-\infty, \infty)$

Q2) The graph of the function  $y = \cos(x - \frac{\pi}{2})$  is symmetric about

1. x- axis
2. origin
3. y- axis
4. none



Q3)  $\lim_{x \rightarrow 0} \frac{\tan 3x}{x}$

1.  $\frac{1}{3}$
2.  $\infty$
3. 0
4. 3

Q4) The graph of  $f(x) = \frac{x^2}{x+1}$  has

1. an oblique asymptote  $y = x - 1$
2. a vertical asymptote  $x = 2$
3. horizontal asymptote at  $y = \frac{1}{2}$

key

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Name (Arabic)..... Number..... Section.....20D.....

Q1) The range of the function  $f(x) = \csc^2(x)$  is

- 1.  $(0, 1]$
- 2.  $[1, \infty)$
- 3.  $(-1, 1)$
- 4.  $[0, \infty)$

$$\csc^2 x = \frac{1}{\sin^2 x}$$
$$0 < \sin^2 x \leq 1$$
$$\frac{1}{\sin^2 x} \geq 1$$

Q2) If  $f(x)$  is odd function and  $g(x)$  is even function, then  $f + g$  is

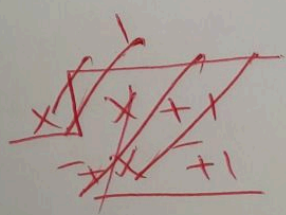
- 1. odd
- 2. even
- 3. odd and even
- 4. neither odd nor even

Q3)  $\lim_{x \rightarrow 0} \frac{\sin x}{2x}$

- 1. 0
- 2.  $\infty$
- 3.  $\frac{1}{2}$
- 4. 2

Q4) The graph of  $f(x) = \frac{x}{x+1}$  has

- 1. an oblique asymptote  $y = x - 1$
- 2. a vertical asymptote  $x = 2$
- 3. no oblique asymptote



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Name (Arabic).....  
Number.....  
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Q1) The range of the function  $f(x) = \csc^2(x)$  is

1.  $(-1, 1)$
2.  $[0, \infty)$
3.  $(0, 1]$
4.  $[1, \infty)$

Q2) If  $f(x)$  is odd function and  $g(x)$  is even function, then  $f - g$  is

1. odd
2. even
3. odd and even
4. neither odd nor even

Q3)  $\lim_{x \rightarrow 0} \frac{\sin 2x}{x}$

1. 0
2.  $\infty$
3.  $\frac{1}{2}$
4. 2

Q4) The graph of  $f(x) = \frac{2x^2}{x-1}$  has

1. an oblique asymptote  $y = 2x + 2$
2. a vertical asymptote  $x = 2$
3. no oblique asymptote

$$\begin{array}{r} 2x + 2 \\ x-1 \overline{) 2x^2} \\ \underline{-2x^2 + 2x} \phantom{+ 2} \\ 2x \phantom{+ 2} \\ \underline{-2x + 2} \\ 2 \end{array}$$

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key 5

• Name (Arabic)..... Number..... Section.....7D.....

Q1) The range of the function  $f(x) = \frac{1}{x^2+4}$  is

1.  $(0, \frac{1}{4}]$
2.  $[\frac{1}{4}, \infty)$
3.  $(-\infty, \frac{1}{4})$
4.  $[0, \infty)$

Q2) The function  $f(x) = \frac{1}{\sqrt{x^2-1}}$  is

1. odd
2. even
3. odd and even
4. neither odd nor even

Q3)  $\lim_{x \rightarrow 0} \frac{1-\cos x}{\sin^2(x)}$

1. 0
2.  $\infty$
3.  $\frac{1}{2}$
4. 2

Q4) The graph of  $f(x) = \frac{x}{x+1}$  has

1. an oblique asymptote  $y = x - 1$
2. a vertical asymptote  $x = 2$
3. no horizontal asymptote
4. horizontal asymptote at  $y = 1$

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Key (5)

• Name (Arabic)..... Number..... Section.....7D.....

Q1) The range of the function  $f(x) = \frac{1}{x^2+9}$  is

1.  $[\frac{1}{9}, \infty)$
2.  $(-\infty, \frac{1}{9})$
3.  $[0, \infty)$
4.  $(0, \frac{1}{9}]$

Q2) The function  $f(x) = \frac{x}{\sqrt{x^2-1}}$  is

1. odd
2. even
3. odd and even
4. neither odd nor even

Q3)  $\lim_{x \rightarrow 0} \frac{\sin^2(x)}{1-\cos x}$

1. 0
2.  $\infty$
3.  $\frac{1}{2}$
4. 2

Q4) The graph of  $f(x) = \frac{x}{x+1}$  has

1. an oblique asymptote  $y = x - 1$
2. a vertical asymptote  $x = -1$
3. no horizontal asymptote
4. horizontal asymptote at  $y = 2$