Form A

Saudi Electronic University

Final Examination

Date: 20/5/2017

Fundamentals of Mathematics

MATH 001

Student Name (ARABIC):

Student ID:

Instructor Name:

CRN:

Instructions:

This exam duration is **2 hours.**
This is NOT an open book exam.
The use of calculators is permitted.
The use of mobile phones is NOT permitted.
Please answer all the **5** questions.
The number of pages are **7 pages** including this page.

Marking Scheme:

	Question	Score	
1	(20 Marks)		
2	(12Marks)		
3	(6 Marks)		
4	(4 Marks)		
5	(8 Marks)		**Signature**
	TOTAL		

Form A

Question 1: (20 points)

Choose the correct answer, write your answer in the table below:

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1. The Slope of the line $x=12$ is:

a) 12 b) -12 c) 0 d) Undefined

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2. The domain of the function $f(x)=5x^2-x+3$ is :

a) $\{x \mid x$ is a real number and $x \neq 5, 3\}$

b) $[-1,6]$

c) $\{x \mid x$ is a real number and $x>8\}$

d) All real numbers.

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3. The interval notation for the set $\{x \mid 8 \leq 2x < 20\}$ is:

a) $[4,10)$ b) $[8,20)$ c) $[6,18)$ d) $(4,10]$

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4. One of the following numbers is an integer.

a) 2.7 b) $\sqrt{2}$ c) -5 d) $\frac{2}{3}$

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5. The opposite of $-\frac{3}{5}$ is:

a) $-\frac{3}{5}$ b) $\frac{3}{5}$ c) $\frac{5}{3}$ d) $-\frac{5}{3}$

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6. One of the following is a difference of squares:

a) x^2+100 b) $16x^2-25$ c) $4x-81$ d) x^2+6x+9

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7. $LCM(x^2-1\ ,\ x+1)=$

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

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8. If a system of two equations in two variables has one solution or no solutions , then the equations are……

a) Inconsistent b) Consistent c) Independent d) Dependent

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9. One of the following relations defines a function :

a) $\{(-6,4),(-5,4),(-4,4),(-4,3)\}$

b) $\{(1,2),(4,-4),(3,6),(3,5)\}$

c) $\{(0,0),(1,1),(2,2),(0,4)\}$

d) $\{(-1,3),(0,3),(3,3),(4,3)\}$

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10. The $x-$intercept for the equation $5x-10y=20$ is :

a) $(4,0)$ b) $(0,-2)$ c) $(15,0)$ d) $(0,30)$

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11. The solution set for the equation $|x-1|=5$ is:

a) $\{-5,5\}$ b) $[-4,6]$ c) $\{-4,6\}$ d) $[-5,5]$

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12. The value of $\left(\frac{3}{5}\right)^0$ is :

a) 0 b) 1 c) $\frac{3}{5}$ d) $\frac{5}{3}$

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13. Let $f(x)=5x^2-1$ and $g(x)=x+3$, then $f(g(0))=$

a) 44 b) 2 c) 29 d) 3

14. Parallel lines have the same ……..

a) $x-$intercept b) $y-$intercept c) Slope d) None

15. The translation of "some number increased by five " is

a) $5x$ b) $x+5$ c) $x-5$ d) $x \geq 5$

16. The equation of a horizontal line containing the point $(2\ ,-5)$ is:

a) $x=2$ b) $x=-3$ c) $y=2x-5$ d) $y=-5$

17. 120 is 40% of what number ?

a) 48 b) 300 c) 250 d) 70

18. The result of $\dfrac{8x^3+4x^2-2x}{2x}$ is:

a) $16x^4+8x^3-4x^2$ b) $6x^2+2x-1$ c) $4x^2+2x$ d) $4x^2+2x-1$

19. $[2,5)\cap(3,7]=$

a) $(3,5)$ b) $[2,7]$ c) $[2,3)$ d) $(5,7]$

20. The decimal notation for the number 2.35×10^{-5} is:

a) 235000 b) 0.00000235 c) 0.0000235 d) 2350000

Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Answer										
Question	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Answer										

Question 2: (12 points)

Solve the following equations:

1. $|3x-7|=x$

2. $x^2+7x+6=0$

3. $\frac{x+1}{x-2}=\frac{x+3}{x-5}$

Question 3: (6 points)

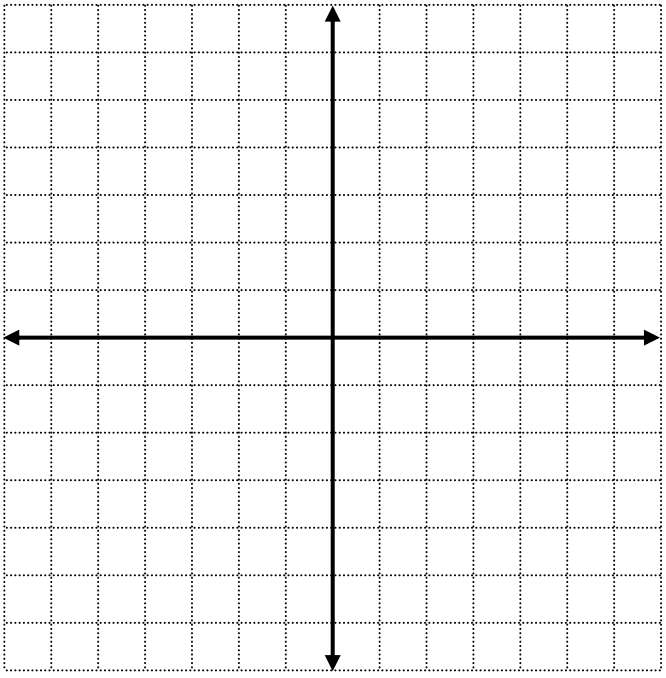
Solve the following inequalities, write the solution set in interval notation:

1. $|3x-1|>8$

2. $2(5x-1)+4x \le 6x-10$

Question 4: (4 points)

Graph $f(x)=|x-1|$



Question 5: (8 points)

1. Write an equation of a Line containing the points $(1,3)$ and $(2,5)$

2. Solve this system .

$$\begin{cases} x+y=5 \\ x-2y=-1 \end{cases}$$