DHOFAR UNIVERSITY
FOUNDATION PROGRAM | MATH UNIT
FPMC 101A – Math Level 1
<mark>Model Paper</mark> - Final EXAM
Term (2023-24)

Student Name			
Student ID		**Date:**	
Section	1	**Duration: 2 hours**	
Instructor			

Instructions:

1) The exam has 5 main questions with a scratch sheet.
2) Please turn off your mobile phone.
3) Use only a blue or black pen.
4) No talking, passing objects or looking in the direction of another student's paper. Any of these behaviors will be considered cheating.

Marking Grid

Question	Question 1 MCQ's (out of 15)	Question 2 (out of 5)	Question 3 (out of 4)	Question 4 (out of 8)	Question 5 (out of 8)	Total / 40 marks
Marks obtained						

Marker's name:		**Moderator's name:**	
Marker's signature:		**Moderator's signature:**	
Date:		**Date:**	

Question 1   (15 Marks)

Circle the correct answer:

1. Which of the following is quadratic equation?

    A. $x - 5 = 1$ B. $x^2 - x = x^2$ C. $x^2 = 0$ D. $x = 0$

2. The distance between the two points $(0, 0)$ and $(6, -8)$ is:

    A.   -10   B. 10   C. 8   D. 6

3. The solution of the quadratic equation $x^2 - 10x = 0$ is:

    A. No solution   B. $x = -10$ C. $x = 10$ and 0   D. $x = 0$

4. If roots of the quadratic equations are 0 and 4 then the quadratic equation is:

    A. $x^2 - 4x = 0$ B. $x^2 + 4 = 0$ C. $x^2 - x = 1$ D. $x^2 - 4x = 7$

5. Find θ, where $\cos\theta = 0$

    A. $\theta = 45^\circ$ B. $\theta = 30^\circ$ C. $\theta = 60^\circ$ D. $\theta = 90^\circ$

6. The center of the circle $(x - 1)^2 + (y + 2)^2 = 100$ is:

    A. $(-1, -2)$ B. $(1, -2)$ C. $(1, 2)$ D. $(-1, 2)$

7. The radius of the circle $(x - 4)^2 + (y + 4)^2 = 49$ is:

    A. $\sqrt{7}$ B. 7   C. 49   D. $\sqrt{6}$

8. One of the following angles is Right angle:

    A. 60°   B. 90°   C. 180°   D. 150°

9. $7 dm =$

    A. 7 cm   B. 70 cm   C. 700 cm   D. 0.7 cm

10. $500 \, cm =$

    A. 5 m   B. 50 m   C. 5000 m   D. 500 m

Question 2:   **(5 Marks)**

Solve the quadratic equation using quadratic formula.

$x^2 - 9x + 20 = 0$

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Question 3:   **(4 Marks)**

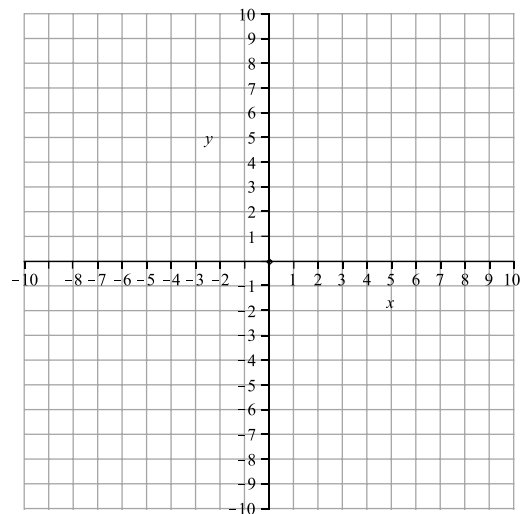1) For the following equation $(x)^2 + (y)^2 = 4$ Find:

   a)   center   (1 mark)

   b)   radius   (1 mark)

   c)   Graph the circle   (2 marks)

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Question 4:   **(8 Marks)**

a) Find the standard equation of the circle with center (1, 7) and radius 5.   (4 Marks)

b) Find the standard equation of the circle with center (0, 0) and radius is 2.   (4 Marks)
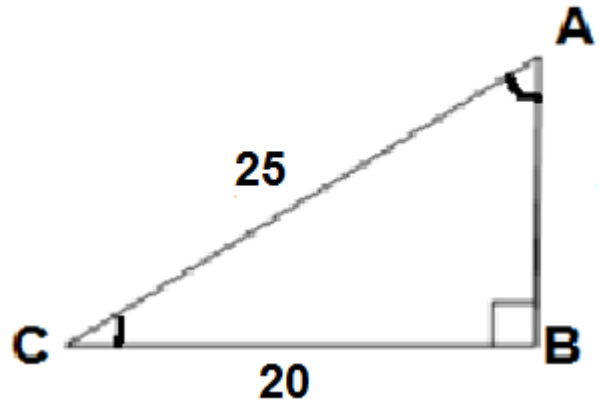
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Question 5:   (**8 Marks)**

Simplify the following with positive integers:

a) For the triangle below. Find:
   (4 Marks)
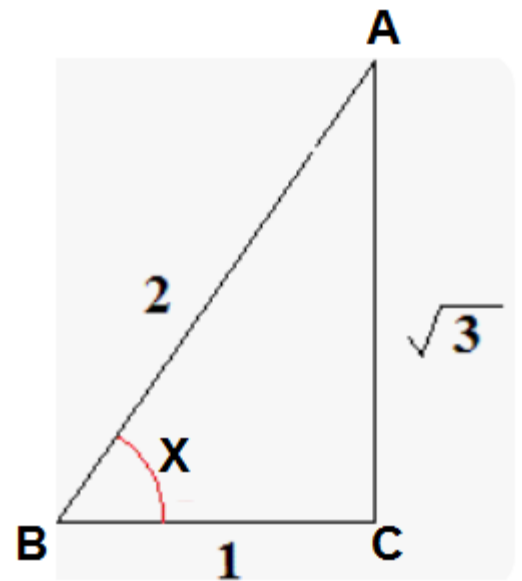
   1) The angle A.

   2) The side AB.

b)   Given the right-angle triangle below. Find   (4 Marks)

1) $\sin x =$

2) $\cos x =$

3) $\tan x =$

4) The angle x.

End of Model Paper Final Exam

SCRATCH SHEET

Name: _____

Note:

1. This scratch sheet will not be marked.

2. Do not detach it from the rest of exam papers.