Centre for Preparatory Studies (CPS)

Math Unit

Math Level 1 (FPM 101A)

<mark>**Model paper - Final Exam**</mark>

Term 1 Fall, 2024-25

Student Name											
Student ID										**Date: 14 /11/2024**	
Section										**Duration: 1 hour 30 minutes**	
Instructor/s	Tareq Al Kushban - Wesam Karadsheh										

General Instructions

- Place your DU ID card on your desk throughout the examination period.
- Read the task instructions carefully.
- Use only a blue or black pen. (Pencil is allowed only for writing tasks)
- Not allowed to use programmable calculators and/or smart-watches/phones or any other smart devices inside the exam hall.
- Must abide by DU's Academic Integrity Policy (AIP)- Policy No. DU-AC-007

⚠️

Dhofar University's Academic Integrity Policy (AIP) is intended to foster hard work, honesty, and responsibility. It strictly prohibits all forms of academic misconduct, including cheating and collusion, plagiarism, and impersonation. By signing below, I agree to abide by the AIP.

تهدف سياسة النزاهة الأكاديمية بجامعة ظفار إلى تعزيز العمل الجاد والأمانة والمسؤولية و تحظر تمامًا جميع الأشكال التي تخالف النزاهة الأكاديمية، بما في ذلك الغش والتواطؤ والسرقة الأدبية والإنتحال. بالتوقيع أدناه ، أوافق على الالتزام بسياسة النزاهة الأكاديمية.
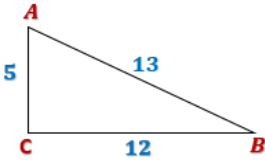
Signature of the student _____

Marking Grid					
Question 1		10	Question 3		10
Question 2		10	Question 4		10
		Total			40

Marked by: _____	Moderated/ Checked by: _____
Signature: _____ Date: _____	Signature: _____ Date: _____

Question 1: MULTIPLE CHOICE. Circle the correct answer. (10 Marks)

1.	Which one of the following is quadratic equation? a) $x^2 = 0$ b) $5^x = 0$ c) $1 + 4^x = 0$ d) $x - 3 = 0$
2.	4 m = a) 4000 mm b) 400 mm c) 40 mm d) 40000 mm
3.	$600\,mm =$ a) 60 cm b) 6000 cm c) 60000 cm d) 6 cm
4.	The distance between $(0, 1)$ and $(2, 2)$ is: a) $\sqrt{5}$ b) 5 c) 8 d) $\sqrt{8}$
5.	The radius of the circle $x^2 + y^2 = 25$ is: a) 25 b) $5\sqrt{5}$ c) $\sqrt{5}$ d) 5
6.	The center of the circle: $(x - 2)^2 + (y - 2)^2 = \sqrt{6}$ is: a) $(6, 2)$ b) $(2, 6)$ c) $(-2, 2)$ d) $(2, 2)$
7.	$90° =$ a) $\dfrac{2}{\pi}\,rad$ b) $\dfrac{\pi}{2}\,rad$ c) $\dfrac{3}{\pi}\,rad$ d) 2π rad
8.	$\dfrac{\pi}{3}\,rad =$ a) $90°$ b) $60°$ c) $270°$ d) $45°$
9.	In the triangle shown below: a) $\sin A = \dfrac{12}{13}$ b) $\sin A = \dfrac{13}{12}$ c) $\sin A = \dfrac{5}{13}$ d) $\sin A = \dfrac{13}{5}$
10.	Which of these angles is straight angle? a) 120 b) 90 c) 180 d) 30

Question 2:   (10 Marks)

a) For the given circle, $(x - 2)^2 + (y + 3)^2 = 9$ Find:

(5 Marks)

1. Center: (1 Mark)

2. Radius: (1 Mark)
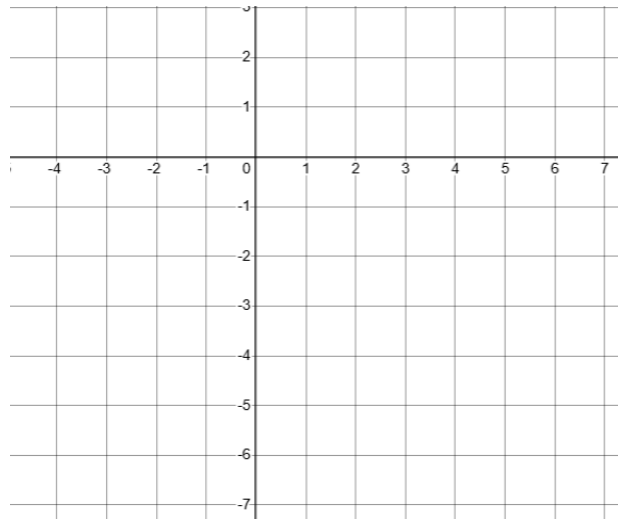
3. Point lies on the circle   (1 Mark)

4. Graph the circle: (2 Marks)

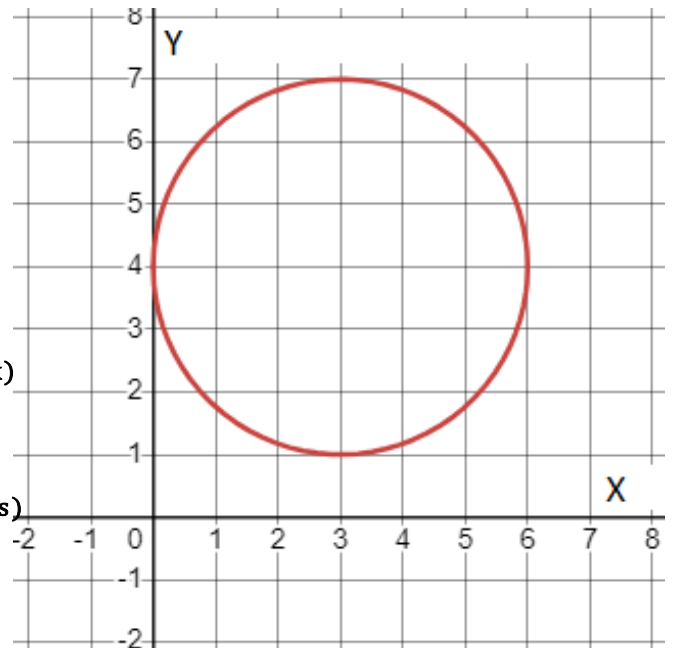b) Find the following from the given circle: (5 Marks)

5. Center: (1 Mark)

6. Radius: (1 Mark)

7. The circle is tangent to _____ (1 Mark)

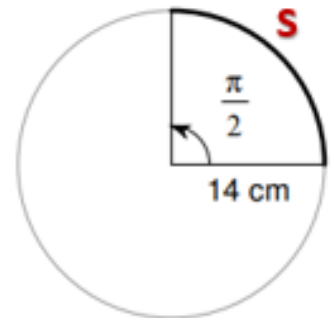8. Write the equation of the circle: (2 Marks)

3

Question 3: (10 Marks)

a) From the given graph of circle, find:

1) The length of arc **S**: (3 Marks)

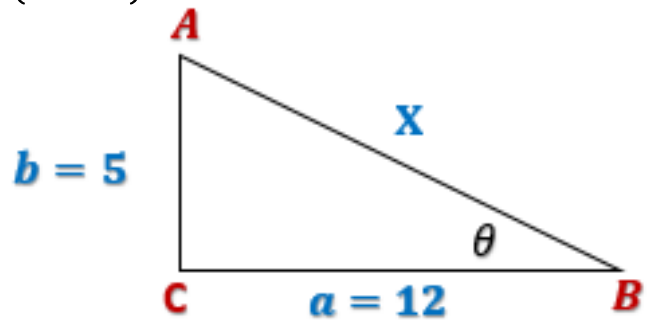
2) The area of sector: (3 Marks)

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b) Solve: $x^2 + 4x + 3 = 0$ (Using quadratic formula). (4 Marks)

Question 4: (10 Marks)

a) In the given right triangle, Find: (7 Marks)

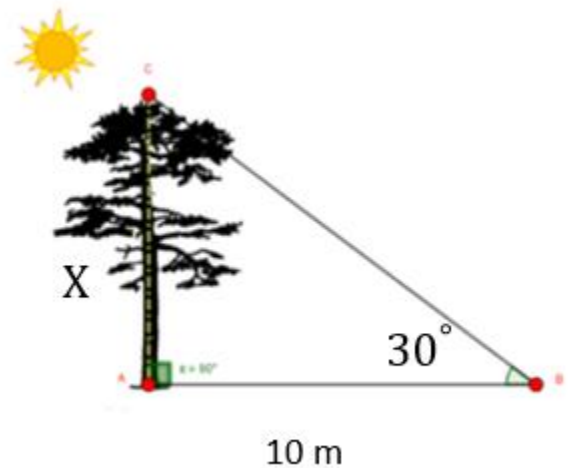1. X using the Pythagorean theorem: (2 Marks)

2. $\sin B =$ (1 Mark)

3. $\cos B =$ (1 Mark)

4. $\tan B =$ (1 Mark)

5. $\angle B =$ (2 Marks)

_____

b) The shadow of a tree is 10 m long and the angle of elevation of the sun is 30°. How tall is the tree? (3 Marks)

End of Final Exam – Model Paper

SCRATCH SHEET

Name: _____

Note:

1. This scratch sheet will not be marked.
2. Do not detach it from the rest of exam papers.