



MIDTERM EXAM

**COURSE: TRACK OF ECONOMICS & ADMINISTRATIVE
SCIENCE (MATH 016)**

SEMESTER: FIRST

YEAR: 1434/1435

DURATION: 90 min

FORM (A)

	الشعبة	Answer Key	الاسم
	التوقيع	رديف .١٦	الرقم الجامعي

INSTRUCTIONS

- 1) The exam contains **05 Pages** total (including the first pages!!) and **06 QUESTIONS**.
- 2) NO book, NO notes, NO Calculator.

Marking Scheme:

	SCORE
QUESTION 1	/10
QUESTION 2	/5
QUESTION 3	/5
QUESTION 4	/5
QUESTION 5	/5
QUESTION 6	/4
TOTAL	/30

Question 1: (10 Marks) Choose the correct answer (write your answers in the table below) :

[1]. The correct **simplification** for $(3x^5y^4)(2x^4y^2)$ is:

- A) $6xy^2$ B) $6x^9y^6$ C) $6x^6y^9$ D) $6x^2y$

[2]. The correct **simplification** for $\left(\frac{x^2y}{xy^2}\right)^{-3}$ is:

- A) $\frac{y^3}{x^3}$ B) x^3y^3 C) $\frac{y^3}{x^2}$ D) $\frac{x^3}{y^3}$

[3]. The **midpoint** of the line segment with end points $(-2,3)$ and $(6,7)$ is:

- A) $(4,5)$ B) $(-4,2)$ C) $(4,-2)$ D) $(2,5)$

[4]. The **y-intercept** for the linear equation $4x - 2y = 8$ is :

- A) $(0,-2)$ B) $(0,2)$ C) $\left(0,\frac{1}{2}\right)$ D) $(0,-4)$

[5]. The **center** and the **radius** of the circle $(x - 1)^2 + (y - 2)^2 = 16$ is:

- A) $C=(1,2)$ and $r=16$ B) $C=(1,2)$ and $r=4$
 C) $C=(-1,2)$ and $r=4$ D) $C=(-1,-2)$ and $r=16$

Question	[1]	[2]	[3]	[4]	[5]
Answer	B	A	D	D	B
	[2]	[2]	[2]	[2]	[2]

Question 2: (5 Marks) Solve the following equations :

a) $4x - 3 = 2x + 5$

$$4x - 2x = 5 + 3$$

$$2x = 8$$

$$\boxed{x = 4}$$

(1)

(0.5)

(0.5)

b) $|2x - 5| = 3$

(1) $2x - 5 = 3$

or $2x - 5 = -3$

(0.5) $2x = 8$

or $2x = 2$

(0.5) $\boxed{x = 4}$

or $\boxed{x = 1}$

Question 3: (5 Marks) Solve the following inequalities:

a) $2 + 3x < 8$

(1) $3x < 8 - 2$

(0.5) $3x < 6$

(0.5) $\boxed{x < 2} \Rightarrow (-\infty, 2)$ (0.5)

b) $|2x - 1| \geq 7$

(0.5) $2x - 1 \geq 7$

or $2x - 1 \leq -7$

(0.5) $2x \geq 8$

or $2x \leq -6$

(0.5) $\boxed{x \geq 4}$

or $\boxed{x \leq -3}$

(0.5) $(-\infty, -3] \cup [4, \infty)$

Question 4: (5 Marks) Factor the following polynomials:

a) $4x^2 - 9$

$= \underbrace{(2x - 3)(2x + 3)}$ (2.5)

b) $x^2 - x - 6$

$= \underbrace{(x + 2)(x - 3)} \rightarrow$ (2.5)

Question 5: (6 Marks) Perform each operation and simplify:

a) $(6x^2 - 3x + 2) - (x^2 + 4x - 6)$

(1.5) $= 6x^2 - 3x + 2 - x^2 - 4x + 6$

(1) $= \boxed{5x^2 - 7x + 8}$

or

$$\begin{array}{r} 6x^2 - 3x + 2 \\ - x^2 + 4x - 6 \\ \hline 5x^2 - 7x + 8 \end{array}$$

b) $(2x - 3)(x - 3)$

(1.5) $= 2x^2 - 6x - 3x + 9$

(1) $= \boxed{2x^2 - 9x + 9}$

or

$$\begin{array}{r} 2x - 3 \\ \cdot \\ x - 3 \\ \hline 2x^2 - 3x \\ - 6x + 9 \\ \hline 2x^2 - 9x + 9 \end{array}$$