This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

SE01 Exam

10NOV2025

Do NOT write in this box. Your MARK will be placed here.

Subject :	Maths
Class :	10E
Teacher :	Mr. RAMI BOU KARROUM
Duration :	1 hour

You are to answer the questions to this exam on : Squared paper

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

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Write all of your solutions neatly on a separate paper unless stated otherwise.

Show your steps.

I- Given Set E= {0,1,2,3,4,5,6,7,8,9}, A and B are two subsets of E defined by:

A= {0,3,6,9}

B = {x / x ∈ E, and x is odd} (10 points)

a) Write A in comprehension and B in extension.
b) Draw the Venn Diagram Representing sets E, A and B.
c) Find: $A \cup B$; $A \cap B$; $\bar{A}$.
d) Complete by ∈, ∉, ⊂ and ⊄

$\emptyset$ ..... $\bar{B}$; 2.....$\bar{A}$; $A \cup B$ ..... E ; {0,1,3,5} ..... B

II- Rationalize the denominator. (3 points)

a) $\frac{5}{\sqrt{5}}$

b) $\frac{3}{2\sqrt{3}-2}$

III- Answer by True or False. Justify your answer. (4 points)

a) X + 3 = 1 has a solution in $\mathbb{N}$.
b) $5x^2 + 25 = 0$ has solution in $\mathbb{Z}$.
c) $|\sqrt{12}-4| = \sqrt{12}-4$.
d) $|-x^6| = x^6$.

IV- Simplify. (4 points)

a) $\sqrt{12}+\sqrt{48}-\sqrt{27}-\sqrt{75}$

b) $(4-2\sqrt{3})^2$

c) $\frac{(3^2\times 7^5)^{-3}}{(7^2\times 5^3)^2} \times \frac{(7\times 3)^3}{3^4\times 7^{-3}}$

V- Calculate the absolute value of each of the following. (4 points)

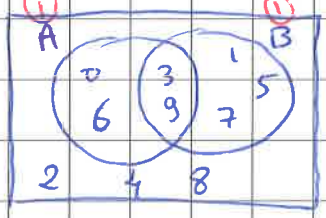
a) $1-\sqrt{3}$
b) $\pi - 3.25$
c) $4+2x^2$
d) $(-1)^{13}$

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Math

I- a) $A = \{x / x \in E, x \text{ is a multiple of } 3\}$ (1)

$B = \{1, 3, 5, 7, 9\}$ (1)

b) 

(1) (1) (1)

c) $A \cup B = \{0, 1, 3, 5, 6, 7, 9\}$ (1)

$A \cap B = \{3, 9\}$ (1)

$\bar{A} = \{1, 2, 4, 5, 7, 8\}$ (1)

d) $\emptyset \subset \bar{B}$ (0.5) ; $2 \in \bar{A}$ (0.5) ; $A \cup B \subset E$ (0.5) ; $\{0, 1, 3, 5\} \not\subset B$ (0.5)

II- a) $\frac{5}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{5\sqrt{5}}{5} = \sqrt{5}$ (0.5) (0.5) (0.5)

b) $\frac{3 \times (2\sqrt{3}+2)}{2\sqrt{3}-2(2\sqrt{3}+2)} = \frac{6\sqrt{3}+6}{12-4} = \frac{6\sqrt{3}}{8} + \frac{6}{8} = \frac{3\sqrt{3}}{4} + \frac{3}{4}$ (0.5) (0.5) (1)

or $= \frac{3\sqrt{3}+3}{4}$

III a) $x+3=1$ False, the solution in $\mathbb{Z}$. (0.5) (0.5)

$x=-2$

b) $5x^2+25=0$

$5x^2=-25$ False, no solution (0.5) (0.5)

$x^2=-5$

c) $|\sqrt{12}-4| = 4-\sqrt{12}$ so False (0.5) (0.5)

d) True. (1)

IV a) $\sqrt{12}+\sqrt{48}-\sqrt{27}-\sqrt{75}$

$= 2\sqrt{3}+4\sqrt{3}-3\sqrt{3}-5\sqrt{3}$ (1)

$= -2\sqrt{3}$ (0.5)

b) $(4-2\sqrt{3})^2 = 16-16\sqrt{3}+12 = 28-16\sqrt{3}$ (0.5) (0.5)

c) $\dfrac{(3^2\times 7^5)^{-3}}{(7^2\times 5^3)^2} \times \dfrac{(7\times 3)^3}{3^4\times 7^{-3}} = \dfrac{3^{-6}\times 7^{-15}\times 7^3\times 3^3}{7^4\times 5^6\times 3^4\times 7^{-3}}$ (0.5)

$= \dfrac{1}{3^7\times 5^6\times 7^{13}}$ (1)

V. a) $|1-\sqrt{3}| = \sqrt{3}-1$ (1)

b) $|\pi - 3.25| = 3.25 - \pi$ (1)

c) $|4+2x^2| = 4+2x^2$ (1)

d) $|(-1)^{13}| = 1$ (1)