This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

SE01 Exam

09NOV2026

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

Subject :	Maths	
Class :	10B and 10C	
Teacher :	Taline Hawatian	
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.

I.- (5 points)

120 students of Class 10 were surveyed about streaming platform subscriptions: Netflix(N), Hulu(H), and Disney +(D).

10 students subscribe to all three, **15** subscribe to Netflix and Hulu, **20** subscribe to Hulu and Disney+, **12** subscribe to Netflix and Disney+. Total Netflix subscribers is **50**. Total Hulu subscribers is **45**. Total Disney+ subscribers is **40**.

1) Draw a Venn diagram representing this information.
2) Calculate the number of students who subscribe to none of these platforms.
3) Calculate the number of students who subscribe to only one platform.
4) Calculate the number of students that subscribe to Netflix and Disney+, but not Hulu.

II.- (5 points)

Tell whether the following statements are true or false. Justify your answer.

1) A= $\{x/\ x$ is a letter of the word "book"$\}$. The cardinal of parts of A is 16.
2) $\left\{-\sqrt{81},\ \frac{4}{7}, 5.1\overline{6}\right\} \subset Q$.
3) E= $\{x/\ x \in Z$ and x is a solution of the equation $x^2 - 3 = 22\}$. E is a pair set.
4) $\frac{7}{3}$ is a decimal number.
5) F= $\{x/\ x \in Q$ and x is a solution of the equation $x^2 - 10 = -7\}$. $F = \phi$.

III.- (12 points)

1) Express, without the absolute value, the following expressions. Justify your answer.

   $A = |6 - 3\sqrt{5}| - |2\sqrt{5} - 4|$

   $B = \left|4x - \frac{12x}{3-x}\right|$ for $x < 3$

2) Solve the following equations and inequalities. Write the solution set.

   a) $2|x - 8| + 5 = 7$ b) $|x - 7| \leq 0$

3) Determine the domain of definition of the following expressions:

$E = \frac{|x+2|-5}{|x|+8}$

$F = \sqrt{|x+3|-7}$

4) Write in the form of an interval:

$A = \{x \,/ x \in R \text{ and } |x-3| \leq 5\}$

$B =]-7;\ 6] \cap [-3; +\infty[$

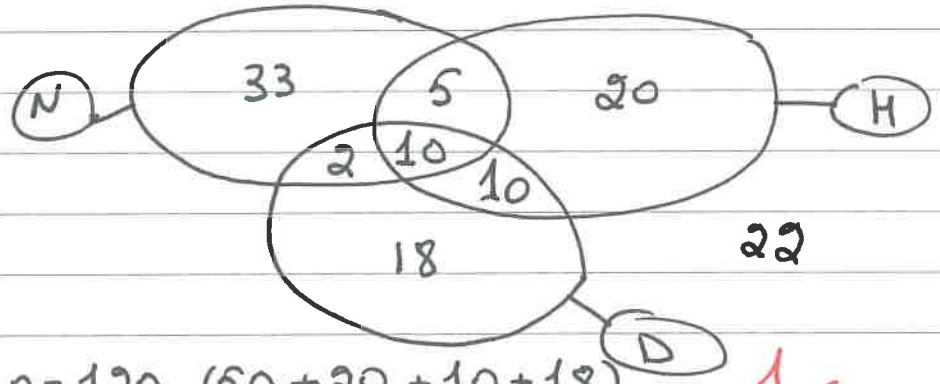
IV.- (3 points)

Simplify the following expression without using a calculator:

$$\frac{56^{-2} \times 10^{-5} \times 0.00027}{42^{-3} \times 10^{-7}}$$

SE01/20262027/Maths/10BC

I.- 1)



2

2) $n = 120 - (50 + 20 + 10 + 18)$ 1
$= 120 - 98 = 22$
22 students subscribe to none of these platforms.

3) $33 + 20 + 18 = 71$ 1
71 students subscribe to only one platform.

4) $12 - 10 = 2$ 1
2 students subscribe to Netflix and Disney+, but not Hulu.

II.- 1) False 0.5
$A = \{b, o, K\}$ Card $A = 3$ Card $P(A) = 2^3 = 8$ 0.5

2) True 0.5
$-\sqrt{81} = -9$ $-9 \in \mathbb{Q}$, $\frac{4}{7} \in \mathbb{Q}$, $5.1\overline{6} \in \mathbb{Q}$. 0.5

3) True 0.5
$x^2 - 3 = 22$ $x^2 = 25$ $x = \pm 5$ 0.5

4) False 0.5 0.5
$\frac{\pi}{3}$ is a rational number or non-decimal periodic number.

5) True 0.5 0.5
$x^2 - 10 = -7$ $x^2 = 3$ $x = \pm\sqrt{3}$. $\pm\sqrt{3}$ are irrational.

III. 1) $A = |6 - 3\sqrt{5}| - |2\sqrt{5} - 4|$

$|6 - 3\sqrt{5}| = 3\sqrt{5} - 6$ since $3\sqrt{5} > 6$ 0.5

$|2\sqrt{5} - 4| = 2\sqrt{5} - 4$ since $2\sqrt{5} > 4$ 0.5

$A = 3\sqrt{5} - 6 - (2\sqrt{5} - 4) = 3\sqrt{5} - 6 - 2\sqrt{5} + 4 = \sqrt{5} - 2$. 1

$B = \left| 4x - \frac{12x}{3-x} \right|$ 0.5

$= \left| \frac{12x - 4x^2 - 12x}{3-x} \right| = \left| \frac{-4x^2}{3-x} \right| = \frac{|-4x^2|}{|3-x|} = \frac{4x^2}{|3-x|}$ 0.5

$4x^2 \geq 0$ for all x in $\mathbb{R}$ 0.25

$3 - x > 0$ for $x < 3$. 0.25

$= \frac{4x^2}{3-x}$

2) a) $2|x-8| + 5 = 7$

$2|x-8| = 2$ $|x-8| = 1$ 0.5

$x - 8 = 1$ 0.5 $x - 8 = -1$

$x = 9$ 0.5 $x = 7$ 0.5 $S = \{7, 9\}$ 0.5

b) $|x-7| \leq 0$ $x - 7 = 0$ $x = 7$ $S = \{7\}$ 1

3) $E = \frac{|x+2| - 5}{|x| + 8}$ $|x| + 8 > 0$ for all x in $\mathbb{R}$.

E is defined for all x in $\mathbb{R}$. 1

$F = \sqrt{|x+3| - 7}$ $|x+3| - 7 \geq 0$ 0.5

$|x+3| \geq 7$

$x + 3 \leq -7$ or $x + 3 \geq 7$ 0.5

$x \leq -10$ 0.5 $x \geq 4$

$S =]-\infty; -10] \cup [4; +\infty[$ 0.5

4) $A = \{x / x \in \mathbb{R} \text{ and } |x-3| \leq 5\}$

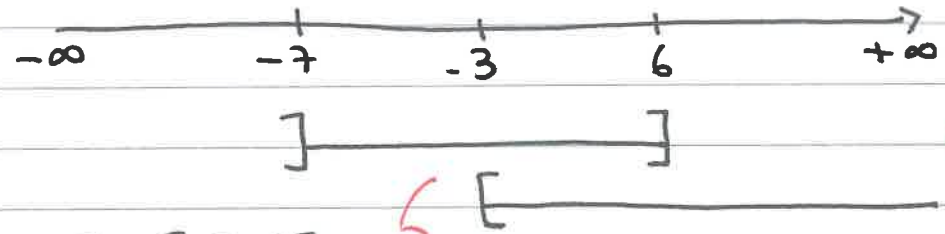
$|x-3| \leq 5$ 0.5

$-5 \leq x-3 \leq 5$

$+3 \quad +3 \quad +3$ 0.5

$-2 \leq x \leq 8$ $A = [-2;8]$ 0.5

$B =]-7;6] \cap [-3;+\infty[$



0.5

$B = [-3;6]$ 0.5

IV. $\dfrac{56^{-2} \times 10^{-5} \times 0.00027}{42^{-3} \times 10^{-7}}$

$= \dfrac{(2^3 \times 7)^{-2} \times 10^{-5} \times 27 \times 10^{-5}}{(2 \times 3 \times 7)^{-3} \times 10^{-7}}$ 1

$= \dfrac{2^{-6} \times 7^{-2} \times 10^{-10} \times 3^3}{2^{-3} \times 3^{-3} \times 7^{-3} \times 10^{-7}}$

1

$= 2^{-3} \times 3^6 \times 7 \times 10^{-3}$

$= 2^{-3} \times 3^6 \times 7 \times 2^{-3} \times 5^{-3}$

$= 2^{-6} \times 3^6 \times 7 \times 5^{-3} = \dfrac{3^6 \times 7}{2^6 \times 5^3}$ 1