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 :	9A
Teacher :	Mrs.Claudine Eid
Duration :	1 hour

Calculators are allowed

You are to answer the questions to this exam on : This exam 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.

Answer ALL questions.

Write your answers in the space provided

You must write down all the stages in your working.

1. a) Use your calculator to work out the value of

$$\sqrt{\frac{208.3-15.7}{5.694+1.8^2}}$$

Write down all the digits on your calculator display.

.....

(2)

b) Estimate $\left(17.9-\sqrt{36.9}\right)\times 3.89$

.....

(2)

(Total for Question 1 is 4 marks)

2. $1.25\times 10^{-12}=k\times(4\times 10^{-20})$

Work out the value of k.

Give your answer in standard form.

$k=$ .....

(Total for Question 2 is 2 marks)

3. Write as a power of 3

$$\frac{27 \times 9^{-1}}{81^{-2}}$$

.....

(Total for Question 3 is 3 marks)

4. There are 30 students in a class.

A teacher is going to choose at random 2 of the students.

Work out the number of different pairs of students that the teacher can choose.

.....

(Total for Question 4 is 2 marks)

5. (a) Express 250 as a product of its prime factors.

.....

(2)

(b) Find the lowest common multiple (LCM) of 30 and 25

.....

(2)

(Total for Question 5 is 4 marks)

6.

$3x^{-1}(4x^3) = bx^n$ for all the values of x that are not zero.

Find the value of b and the value of n.

$b =$ .....

$n =$ .....

(Total for Question 6 is 2 marks)

7. (a) Write 3.402×10^5 as an ordinary number.

.....

(1)

(b) Write 0.8026 in standard form.

.....

(1)

(c) Calculate the value of $9.7 \times 10^6 + 2.45 \times 10^7$

Give your answer in standard form.

.....

(4)

(Total for Question 7 is 6 marks)

8. Simplify fully following

(a) $(-3x^4)^0$

.....

(1)

(b) $2x^3y^5 \times 7x^2y$

.....

(2)

(c) $(m^2)^{-3}$

.....

(1)

(d) $\frac{25y^4}{5y}$

.....

(2)

(e) $(25d^6)^{\frac{1}{2}}$

.....

(2)

(f) $\frac{8x^2y^{-1}}{4x^3y}$

.....

(3)

(Total for Question 8 is 11 marks)

9. $\dfrac{3^n \times 3^{20}}{3^8} = 3^{14}$

(a) Find the value of n.

$n =$ .....

(2)

(b) Write $\left(64m^{12}\right)^{\frac{2}{3}}$ in the form am^b where a and b are integers.

.....

(2)

(Total for Question 9 is 4 marks)

10. (a) Work out $25^{\frac{1}{2}} \times 8^{\frac{1}{3}}$

.....

(2)

(b) Find the value of $\left(\frac{1}{32}\right)^{\frac{3}{5}}$

.....

(2)

(Total for Question 10 is 4 marks)

11.(a) Rationalise the denominator of $\frac{15}{\sqrt{5}}$

Give your answer in its simplest form.

.....

(2)

(b) Rationalise the denominator of $\frac{1}{\sqrt{7}}$

.....

(1)

(c) Simplify fully $\sqrt{80} - \sqrt{5}$

.....

(2)

(Total for Question 11 is 5 marks)

TOTAL FOR PAPER IS 47 MARKS

Answer ALL questions.

Write your answers in the space provided

You must write down all the stages in your working.

1. a) Use your calculator to work out the value of

$$\sqrt{\frac{208.3-15.7}{5.694+1.8^2}}$$

Write down all the digits on your calculator display.

4.643069317

2

(2)

b) Estimate $(17.9-\sqrt{36.9})\times 3.89$

$(18-6)\times 4$ 1

12×4

48 1

48

(2)

(Total for Question 1 is 4 marks)

2. $1.25\times 10^{-12}=k\times(4\times 10^{-20})$

Work out the value of k.

Give your answer in standard form.

$$k=\frac{1.25\times 10^{-12}}{4\times 10^{-20}}=0.3125\times 10^{8}=3.125\times 10^{7}$$

1 1

$k=$ 3.125×10^{7}

(Total for Question 2 is 2 marks)

3. Write as a power of 3

$$\frac{27 \times 9^{-1}}{81^{-2}}$$

$$\frac{3^3 \times 81^2}{9} = \frac{3^3 \times (3^4)^2}{3^2} = \frac{3^3 \times 3^8}{3^2} = \frac{3^{11}}{3^2} = 3^9$$

[1] [1] [1]

.....

(Total for Question 3 is 3 marks)

4. There are 30 students in a class.

A teacher is going to choose at random 2 of the students.

Work out the number of different pairs of students that the teacher can choose.

30 29

[1]

$$\frac{30 \times 29}{2} = 435 \text{ pairs}$$

[1]

435 pairs

.....

(Total for Question 4 is 2 marks)

5. (a) Express 250 as a product of its prime factors.

$250 = 25 \times 10 = 5^2 \times 5 \times 2 = 5^3 \times 2$ [1] [1]

$5^3 \times 2$

(2)

(b) Find the lowest common multiple (LCM) of 30 and 25

$30 = 3 \times 2 \times 5$ [1]

$25 = 5^2$

$LCM = 5^2 \times 2 \times 3 = 150$ [1]

150

(2)

(Total for Question 5 is 4 marks)

6. $3x^{-1}(4x^3) = bx^n$ for all the values of x that are not zero.

Find the value of b and the value of n.

$12x^2$

$b =$ 12 [1]

$n =$ 2 [1]

(Total for Question 6 is 2 marks)

7. (a) Write 3.402×10^5 as an ordinary number.

340,200

1

(1)

(b) Write 0.8026 in standard form.

8.026×10^{-1}

1

(1)

(c) Calculate the value of $9.7 \times 10^6 + 2.45 \times 10^7$

Give your answer in standard form.

9,700,000 + 24,500,000

1 1

34,200,000

1

3.42×10^7

1

3.42×10^7

(4)

(Total for Question 7 is 6 marks)

8. Simplify fully following

(a) $(-3x^4)^0$

1 [1]

(1)

(b) $2x^3y^5 \times 7x^2y$

$14x^5y^6$ [1] [1] [1]

(2)

(c) $(m^2)^{-3}$

$m^{-6} = \frac{1}{m^6}$ [1]

(1)

(d) $\frac{25y^4}{5y}$

$5y^3$ [1] [1]

(2)

(e) $(25d^6)^{\frac{1}{2}}$

$5d^3$ [1] [1]

(2)

(f) $\frac{8x^2y^{-1}}{4x^3y}$

$\frac{2}{xy^2}$ [1] [1] [1]

(3)

(Total for Question 8 is 11 marks)

9. $\frac{3^n \times 3^{20}}{3^8} = 3^{14}$

(a) Find the value of n.

$20 + n - 8 = 14$

$n = 14 - 12$

$n = 2$

$n =$ 2

(2)

(b) Write $\left(64m^{12}\right)^{\frac{2}{3}}$ in the form am^b where a and b are integers.

$\sqrt[3]{(64m^{12})^2} = \sqrt[3]{(4^3)^2(m^{12})^2} = \sqrt[3]{4^6 m^{24}} = 4^2 m^8 = 16m^8$

OR $(4^3 m^{12})^{\frac{2}{3}} = 4^2 m^8 = 16m^8$

[1] [1]

$16m^8$

(2)

(Total for Question 9 is 4 marks)

10. (a) Work out $25^{\frac{1}{2}} \times 8^{\frac{1}{3}}$

5 x 2 [1]

10 [1]

10

(2)

(b) Find the value of $\left(\frac{1}{32}\right)^{\frac{3}{5}}$

$\frac{1}{\sqrt[5]{(2^5)^3}} = \frac{1}{2^3}$ [1] $= \frac{1}{8} = 0.125$ [1]

OR $\frac{1}{(2^5)^{\frac{3}{5}}} = \frac{1}{2^3} = \frac{1}{8}$

0.125

(2)

(Total for Question 10 is 4 marks)

11.(a) Rationalise the denominator of $\frac{15}{\sqrt{5}}$

Give your answer in its simplest form.

$\frac{15\sqrt{5}}{\sqrt{5}\sqrt{5}} = \frac{15\sqrt{5}}{5} = 3\sqrt{5}$ [1] [1]

$3\sqrt{5}$

(2)

(b) Rationalise the denominator of $\frac{1}{\sqrt{7}}$

$\frac{1\sqrt{7}}{\sqrt{7}\sqrt{7}} = \frac{\sqrt{7}}{7}$ [1]

$\frac{\sqrt{7}}{7}$

(1)

(c) Simplify fully $\sqrt{80} - \sqrt{5}$

$\sqrt{16 \times 5} - \sqrt{5}$ [1]

$4\sqrt{5} - \sqrt{5}$ [1]

$3\sqrt{5}$

$3\sqrt{5}$

(2)

(Total for Question 11 is 5 marks)

TOTAL FOR PAPER IS 47 MARKS