1 Complete each of the following:

1) If $\frac{3}{7} \times (x) = \frac{3}{7}$ then x = ...
2) The algebraic term $2x^3y$ is of ..... degree.
3) The mode of the values 5 , 3, 1, 3, 5, and 3 is ..... .
4) Zero ÷ (- 12) = ...
5) $\frac{1}{2}$ = ... % .

2 Choose the correct answer from the given ones:

1) $(x - 1)(x^2 + x + 1)$ = ...

a) $x^3 + 1$ b) $x^3 - 1$ c) $x^3 + 3$ d) $x^2 + 2x$

2) 0. 57 = ... %

a) $\frac{57}{100}$ b) $\frac{75}{99}$ c) $\frac{575}{1000}$ d) $\frac{19}{33}$

3) The arithmetic mean of the numbers 3, zero, 4, 6 and 7 is .....

a) 4 b) 5 c) 6 d) 7

4) The median of the values 2, 6, 8, 4, and 10 is .....

a) 4 b) 5 c) 6 d) 8

5) $\left|-\frac{7}{3}\right|$ ..... zero.

a) > b) = c) < d) ≤

3 (a) Find the sum of : $3x^2 + 2x + 5$ and $2x^2 - 4x - 3$

(b) Factorize by taking the H. C. F :5xy + 10xz

(c) Divide : $9x^3y^2 - 3xy$ by 3 x y where $x\,y \neq 0$

4 (a) Use the distribution property to find the value of:

$\frac{5}{11} \times 9 + \frac{5}{11} \times 4 - \frac{5}{11} \times 2$

(b) Find three rational numbers lying between: $\frac{1}{3}$, $\frac{1}{5}$

(c) Divide: $x^2 - 5x + 6$ by (x -3)

5 The following table shows the marks of Mona in mathematics in 5 months:

month.	Sept.	Oct.	Nov.	Dec.	Jan.
Math.	30	40	35	42	50

(1) Represent the previous data by broken line graph.
(2) Find the difference between the greatest and smallest mark obtained by Mona.

1 Choose the correct answer:

1) The value of $|-7| + |-1| =$ .....

a) –8 b) 6 c) 8 d) - 6

2) 0. 57 = ...

a) $\frac{57}{100}$ b) $\frac{75}{99}$ c) $\frac{575}{1000}$ d) $\frac{19}{33}$

3) The algebraic term $2ab^2$ is of ..... degree.

a) 1^{st} b) 2^{nd} c) 3^{rd} d) 4^{th}

4) The median of the numbers: 2, 8, 5, 7, 6, is .....

a) 5 b) 7 c) 8 d) 6

5) $\frac{2}{x-7} \in Q$ if $x \neq$ .....

a) 7 b) 2 c) 0 d) -2

2 Complete each of the following:

1) The coefficient of $4a^3b^2$ is ..... .

2) The multiplicative inverse of the rational number $3\frac{1}{2}$ is ..... .

3) The mode of the values 3 , 6, 3, 3, 6, 4, 3 is ..... .

4) The rational number lying at half way between $\frac{1}{3}$ and $\frac{3}{4}$ is ..... .

5) The arithmetic mean of the numbers: 2, 7, 6, 9, 16, 20 is ..... .

3 (a) Factorize the following by taking H. C. F. : $15x^3y^3 - 20x^2y^3 - 25xy$

(b) Find the quotient of : $\frac{16a^3b^2 - 24a^2b^2}{4a^2b}$ where $ab \neq 0$

4 (a) Using the properties of the rational numbers, find the value of:

$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$

(b) Find three rational numbers between: $\frac{1}{2}$ and $\frac{1}{3}$

(c) Simplify : (2 a - 3) (2 a + 3) + 7, then find the numerical value of the result when a = -1

5 (a) What is the increase of : $x^2 - 5x - 1$ than $3x^2 - 2x - 3$

(b) Divide: $x^2 - 8x + 12$ by (x -6)

(c) The following table shows the marks of Ali in 5 months:

The month.	Sep.	Oct.	Nov.	Dec.	Jan.
The mark.	30	40	35	45	50

Represent these data by broken line.

1 Choose the correct answer:

1) The rational number which lies between $\frac{1}{3}$ and $\frac{2}{5}$ is = ...

a) $\frac{5}{15}$ b) $\frac{7}{15}$ c) $\frac{11}{30}$ d) $\frac{13}{30}$

2) $\frac{9}{x-2} \in Q$ if $x \neq$ .....

a) 9 b) 2 c) 0 d) -2

3) The median of the values: 3, 7, 2, 9, 5 and 11 is .....

a) 5 b) 6 c) 7 d) 12

4) If $x + \frac{3}{x} = 7 + \frac{3}{7}$ then x = ...

a) $\frac{1}{7}$ b) $\frac{4}{7}$ c) 1 d) 7

5) $|-\frac{3}{2}|$ ..... zero.

a) > b) < c) = d) ≤

2 Complete each of the following:

1) The coefficient of $5x^3y$ is ..... .

2) The mode of the numbers 5, 8, 9, 11, 5 is ..... .

3) The multiplicative inverse of the rational number $2\frac{1}{5}$ is ..... .

4) The Arithmetic mean of the values 14, 18, 17 and 15 is ..... .

5) $|-6| - |3|$ = ...

3 a) Use the distributive property to calculate:

$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$

(b) **Divide:** $(60x^6 - 48x^{10} - 12x^3)$ by $(-12x^3)$

4 a) Factorize by taking the H.C.F. $12x^2y - 6xy^2$

(b) **Reduce to the simplest form:** $(3x-2)^2 - (x+2)(x-2)$

(c) **Divide:** $3x^2 - x - 2$ by $(x - 1)$

5 a) Add: $3a - 2b + C$ and $2a + 3b - 5C$

(b) **from the following table:**

Mark.	5	6	7	8	9	10
No. of pupils freq.	3	5	7	9	4	2

1- Represent the data by bar charts.

2- Find the mode mark.

1 Choose the correct answer:

1) $\frac{5}{x+1}$ is The rational number if x ≠ ..... {O , 5 , 1 ,- 1}

2) $(3x+2)(x+7) = 3x^2 + \ldots\ldots + 14$ { 23 x ,19 x , 21 x, 2x}

3) The mode of the values: 4, 3, 8, 1, 8 , 3 and 3 is ..... { 1 , 8 , 3 , 4}

4) $(4a^2 + 2a) \div 2a = \ldots\ldots$ { 2a +1, 2a, 2a - 1, 1 }

5) the number $0.\dot{5}\dot{7}$ as a rational number in the simplest form is .....

{ $\frac{5}{9}$, $\frac{19}{33}$, $\frac{3}{7}$, $\frac{2}{3}$ }

2 Complete:

1) The degree of the term $5x^2y$ is ..... and its coefficient is .....

2) The arithm. mean of the these numbers 2, 5, 8, 9, 14, 28 is ..... .

3) x (a + 1) -y (a+1) = (a + 1) (..... - .....) .

4) The median of these numbers 12, 13, 8, 2, 10 is .....

5) The multiplicative inverse of the rational number $1\frac{2}{3}$ is ..... .

3 a) Add: $5x^2 + y^2 - 3xy$ and $x^2 - 2xy + 3y^2$

(b) **Subtract:** 5a - 3b + 6c from 2b + a-5c

(c) **Factorize by identifying the H.C.F:** $15a^3b^2 + 6a^2b - 3ab$

4 a) If $x = \frac{1}{2}$, y = -3 and $z = \frac{-3}{4}$

Find in the simplest form the numerical value of: $(x \div z) \times y$

(b) Using the property of distribution to get the result of

$\frac{2}{3} \times \frac{4}{7} + \frac{2}{3} \times \frac{5}{7} - \frac{2}{3}$

(c) **Divide:** $x^2 - 5x + 6$ by (3 - x)

5 a) Simplify: $(2x+1)^2 + (1-2x)(1+2x)$

(b) **This frequency table shows the weight of 30 primary school pupils:**

KG.	25	26	27	28	29	30	31	32
Number of pupils	5	8	5	3	5	6	4	4

a) Draw a bar chart for the frequency table data.

b) Identify and write the mode weight of the primary school pupils.

1 Question one : Choose the correct answer:

1) If $\frac{x}{y} = 1$ then $2x - 2y =$ ..... {4 , 2 , 1 , 0}

2) The degree of $-5\ x^2y^3z$ is ..... { 2 , 3 , 5 , 6}

3) The order of median of 7 values is ..... { 3 , 4 , 5 , 6}

4) $|-5| - |4| =$ …..… { -1, 1, -9, 9 }

5) The number between $\frac{2}{3}$, $\frac{3}{5}$ is ..... $\{\frac{30}{45}, \frac{29}{45}, \frac{18}{30}, \frac{20}{30}\}$

2 Question two : Complete:

1) The most repeated value is .....

2) The number 1.25 in the form of $\frac{a}{b}$ is ..... .

3) Subtracting -5 xy from - 3xy = ...

4) $(x + 3)^2 = x^2 +$ ..... $+ 9$.

5) The sum of 5 values if there mean is 5 is ..... .

3 Question three:

(a) Find the value of $(2x - 3)(2x + 3) + 9$

(b) Use an arrow to represent the number $\frac{7}{9}$ on the number line.

(c) Find the value of k that makes the expression:
$x^3 + x^2 + 2x + k$ is devisable by $(x - 3)$

4 Question four:

a) **Divide:** $9\ x^2\ y + 12xy^2 - 15x^2y^2$ by $-3\ xy$ where $x, y \neq 0$

(b) Find the value of $(-\frac{3}{7}) \times \frac{5}{6} - \frac{5}{6} \times (-\frac{3}{7})$

5 Question five :

(a) **Factorize the following by taking H. C. F.:** $15\ x^3y^3 - 20\ x^2\ y^3 - 25\ x^3y^2$

(b) Ashraf recorded the length of his bus journeys to school for 3 weeks. He wrote time to the nearest minute.

15	17	16	17	15	13	22	16	14	25	17	16	18	16	18

a) Identify the median time.

b) Identify the mode time.

(c) Calculate the mean time.

Answer the following questions:

1 Choose the correct answer from the given ones:

1) The additive inverse of the number $(-2)^3$ = ...

(a) 8 b) -8 c) 4 d) 6

2) $(x^{-2})^3$ = ... $x \neq 0$

(a) x^{-5} b) x c) x^{-6} d) x^6

3) The probability of the impossible event = ...

(a) 1 b) ϕ c) -1 d) zero

4) Half the number 2^{10} is ….....…

(a) 2^9 b) 2^5 c) 2^{11} d) 2^{20}

5) 0.0000073 = ...

(a) 7.3×10^6 b) 7.3×10^{-6} c) 7.3×10^5 d) 7.3×10^{-5}

2 Complete the following:

1) $\sqrt{16+9}$ = ...

2) 2, 7, 12 , 17 , ... (in the same pattern)

3) $(\frac{-2}{3})^6 \div (\frac{2}{3})^4$ = ...

4) If 3 x = 12 then 2 x = ...

5) A fair die is rolled once, then the probability of getting an odd number equals .....

3 Find each of the following:

(a) $(\frac{2}{5})^2 \times \sqrt{\frac{25}{4}} \times (1\frac{3}{4})^0$

(b) Determine 3 ordered pairs satisfying the relation y = 2x + 1, then graph them.

(c) **Divide:** $6x^2 - 13x + 6$ by $(3x - 2)$.

4 (a) **Find the solution set of each of the following in Q:**

1) 2 x - 1 = 7 2) 3 x + 4 ≥ 10

(b) Simplify: $\frac{(7)^3 \times (-7)^4}{(7)^5}$

5 (a) If $x = \frac{2}{3}$, $y = \frac{-3}{4}$, z = 2

Find the numerical value of $x^2 y^2 + 2z$

b) A box contains 3 red balls, 5 yellow balls and 2 black balls. A ball is drawn randomly, find the probability that the drawn ball is.

(a) yellow ball. b) not black ball. c) red ball

1 Choose the correct answer:

1) $0.\dot{7}$ = ...

a) $\frac{7}{10}$ b) $\frac{7}{9}$ c) $\frac{7}{100}$ d) $\frac{7}{99}$

2) The multiplicative inverse of the number $\frac{1}{2}$ is .....

a) 1 b) -2 c) 2 d) 5

3) If $(x - 3)(x + 3) = x^2 - k$ then k = ...

a) 9 b) 6 c) -9 d) -6

4) The median of values 9 , 7 , 10 is .....

a) 7 b) 10 c) 9 d) 3

5) $|-3| + 3$ = ...

a) zero b) 6 c) -6 d) 33

2 Complete each of following:

1) $x^4 \times x^2$ = ...

2) The degree of the algebraic expression $5x^2 + 4$ = ...

3) $(2x + 5)^2 = 4x^2 +$ ..... + 25

4) The rational number which is between $\frac{4}{11}, \frac{6}{11}$ is .....

5) If a + b = 5 then 3a + 3b = ...

3 a) Add: $2x - 5y + 6z$ to $3x + 5y - 2z$

(b) **Divide:** $8b^3 + 12b^2 - 4b$ by 4 b

4 a) Using distributive property, find the value of $\frac{5}{13} \times 8 + \frac{5}{13} \times 5$

(b) Factorize by taking the H. C. F : $9x^2 - 27x$

(c) **Divide:** $x^3 + x^2 + 2x - 16$ by $(x - 2)$

5 a) Find three rational numbers lying between: $\frac{1}{3}, \frac{1}{2}$

(b) **The following table shows the frequency of marks of 33 students:**

Marks	5	6	7	8	9	10
Frequency	4	10	8	6	3	2

1) Represent it with column.

2) Find the mode.

1 Complete:

1) The degree of $7 x^3y$ is = ...

2) The multiplicative inverse of the rational number $3\frac{1}{2}$ is .....

3) The mode of the values (17 , 10 , 12 , 17, 10 and x) is 10, then x = ...

4) $(2x + 3)$ (..... + 4) = $6x^2$ + ... + 12

5) $\frac{-7}{x-3} \in Q$, then $x \neq$ .....

2 Choose the correct answer:

1) The Arithm. mean of the values 11, 20, 22, 15, 22 is .....

(a) 18 b) 15 c) 22 d) 90

2) $|5 - 7| + 2$ = ……..…. .

(a) -2 b) 4 c) 0 d) 2

3) The number which lies at half way between $\frac{1}{2}$ and $\frac{7}{8}$ is .....

(a) $\frac{11}{16}$ b) $\frac{11}{8}$ c) $\frac{11}{4}$ d) $\frac{11}{32}$

4) The median of the numbers 6, 2, 8, 0, 3 and 5 is .....

(a) 3 b) 4 c) 6 d) 5

5) The increase of (2x -5) than (x - 2) = ...

(a) 3x - 7 b) x - 3 c) 3 - x d) $2x^2 + 10$

3 Use the distributive property to find:

(a) $\frac{7}{13} \times 11 + \frac{7}{13} \times 9 - \frac{7}{13} \times 7$

(b) Add $x^2 + 5xy - 5$ and $-4x^2 + 5xy + 2$
and find the value of the result when x = 2 and y = 1

(c) **Divide:** $x^3 + 2x^2 - 1$ by $(x + 1)$

4 Divide:

(a) $\frac{16x^3y - 12x^4 + 4x}{4x}$ where $x \neq 0$

(b) Find three rational numbers lying between: $\frac{1}{3}$, $\frac{1}{2}$

5 Factorize by taking H.C.F :

(a) $4x^2 + 2x + 16x^4$

(b) Simplify (x - 5) (x + 5).

(c) The following table shows the marks of Heba in 5 months.

The month.	Sep.	Oct.	Nov.	Dec.	Jan.
The mark.	30	40	35	45	50

Represent these data by broken line.

1 Complete the following:

(a) The mode of the values 23, 33, 23, 33, 23, 21 is .....

(b) $(x - 2y)^2$ = ...

(c) The multiplicative inverse of $(\frac{1}{3} - \frac{1}{2})$ is .....

(d) The degree of the expression $(2xy^2 - 5xy^3 + 4xy)$ is .....

(e) If the Arithm. mean of 10 values is 54.5, then the sum of these values = ...

2 Choose the correct answer:

(a) $|3 - 8| + 3$ = ……..…. . {-2 , 8 , -8 , 2}

(b) The number which lies at half the way between $\frac{1}{2}$ and $\frac{7}{8}$ is .. $\{\frac{11}{16}, \frac{11}{8}, \frac{11}{4}, \frac{11}{32}\}$

(c) $0.\dot{5}\dot{7}$ = ... $\{\frac{57}{100}, \frac{75}{99}, \frac{575}{1000}, \frac{19}{33}\}$

(d) The median of the numbers 23 , 33 , 13 , 32 , 22 , 31 is ..... {22 , 23 , 27 , 32}

(e) If $(x - 7)(x + 7) = x^2 + a$, then a = ... {14 , -14 , 49 , -49}

3 (a) Use the properties of multiplication and addition to find the value of:

$\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(b) Find three rational number lies between $\frac{3}{4}$ and $\frac{2}{3}$

4 (a) Subtract $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

(b) Factorize by taking out the H.C.F $12x^5y^2 - 15x^3y^2 + 3yx^2$

(c) **Divide:** $x^2 + 10x + 24$ by $(x + 4)$

5 (a) **Divide:** $(18x^3y - 12xy^2 + 6xy)$ by 6xy?

(b) The table shows scores for a class on a 10 points math test.

Scores	5	6	7	8	9	10
Frequency	4	10	8	6	3	2

Find

i) The number of students whose score less than 8 ?

ii) the median of the score ?

iii) the mode of the score?

Answer the following questions:

1 Choose the correct answer:

(a) If $\frac{7}{a-4}$ rational number then a ≠ …..… {7 or 4 or - 4 or zero}

(b) $|-5|+5=$ ..... {zero or 10 or 55 or 25}

(c) The mode of the numbers 6, 8, 8, 5, 6, 8 and 7 is ..... {5 or 6 or 7 or 8}

(d) If $\frac{x}{y}=1$, then $2x-2y=$ ..... {zero or 1 or 2 or -4}

(e) Write the number 0.18 in the form of $\frac{a}{b}=$ .....

{$\frac{18}{10}$ or $\frac{2}{11}$ or $\frac{18}{100}$ or $\frac{99}{18}$ }

2 Complete:

(a) $(\frac{-2}{3})^0+4=$ .....

(b) The additive inverse of the number $(\frac{-3}{5})$ is .....

(c) The median of the values 7 , 4 , 5, 2 and 9 is .....

(d) The degree of the algebraic term - 7 is .....

(e) If $\frac{2}{3}x=1$ then x = ...

3 (a) Factorize by identifying the H.C.F $15a^3b^4+6a^5b^2-3a^2b^2$

(b) Find the rational number in half-way between the numbers $\frac{1}{3}$ and $\frac{4}{5}$.

(c) **Divide:** $(64x^3-32x^2+8x)$ by 8x

4 (a) Add: -7 a -5 b + 9 c and 2 c - 4 a + 3 b

(b) Find the total area of the cube its volume 27 cm^3.

(c) if $A=\frac{3}{4}$ and $B=\frac{-5}{2}$ Then find the value of $\frac{A-B}{A+B}$

5 (a) Find the mean of the values 2 , 5, 8 , 9, 14 and 28

(b) **Divide:** x^4-16 by (x^2+4)

(c) The table shows scores for a classroom a 10 point math test.

Scores	4	5	7	8	9	10
Frequency	6	5	13	7	4	2

1) Represent these data by broken line graph.

2) what is the mode of the score.

1 Choose the correct answer:

1) The value of $|-7| + |-1| =$ ..... = (-8 , 6 , 8 , -6)

2) $(35x^5 + 7x^2) \div 7x^2 =$ ..... $(5x^3 + x \ , \ 5x^3 + 1 \ , \ 5x^7 + 1 \ , \ 5x^3)$

3) The algebraic, term $2ab^2$ is of .... degree $(1^{st} \ , \ 2^{nd} \ , \ 3^{rd} \ , \ 4^{th})$

4) The median of the numbers: 2, 8, 5, 7, 6 is ..... (5 , 7 , 8 , 6)

5) The mean of the number: 2, 7, 6, 9, 16, 20 is ..... (6 , 10 , 9 , 11)

2 Complete:

1- $(x + 3)(x - 3) = x^2 -$.....

2- The multiplicative inverse of the number $\frac{-2}{3}$ is .....

3- $3a^2 \times -2a^3 =$ .....

4- The mode of the values 4, 8, 6, 4, 4, 8 is .....

5- The rational number in half way between $\frac{3}{5}$, $\frac{4}{5}$ is .....

3 (a) **Subtract:** $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

(b) **Divide:** $14x^3 - 21x^2 + 7x$ by $7x$ where $x \neq 0$

(c) **Add:** $2x - 7y + z$ and $5z + 6y - 2x$

4 (a) Use the destructive property to find:

$\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(b) Simplify $(x + 3)(x + 5)$

(c) if $a + b = 3$ then $5a + 5b =$ .....

5 (a) **Find:** $\frac{3}{5} \div \frac{9}{15}$

(b) **Divide:** $x^2 - x - 72$ by $(x - 9)$

(c) Represent these data by using broken line:

The month	Sep	Oct	Nov	Dec	Jan
The mark	30	40	35	45	50

Answer the following questions:

1 Choose the correct answer in brackets:

1) If $|x| = 9$, then x = ……

(a) -9 b) ±9 c) 3 d) 9

2) $(5)^{-1}$ = ...

(a) -5 b) $-\frac{1}{5}$ c) $\frac{1}{5}$ d) 5

3) The mean of the values 2, 5, 8, and 9 is .....

(a) 6 b) 18 c) 9 d) 11

4) The ordered pair ..... satisfies the relation: $y = x + 2$

(a) (1 , 3) b) (3, 2) c) (1, 2) d) (-2, 4)

5) The multiplicative inverse of the number ..... is itself

(a) -1 b) 0 c) 2 d) 3

2 Complete each of the following:

(a) $(x + 5)(x + ...) = x^2 + ... + 15$

(b) The standard form of the number 290000 is .....

(c) (20 - 1) (20 + 1) = 400 - .....

(d) If $x < y$, $z <$ zero , then xz .....yz

(e) If the age of Ahmed now is x years, then his age after four years = ... years

3 Find the solution set of each of the following:

(a) $x + 13 = 14$, $x \in Q$

(b) $1 \leq x - 5$, $x \in Q$

4 (a) Simplify and find the value of: $\times \sqrt{\frac{81}{16}} \times (\frac{2}{3})^3 \times (\frac{5}{7})^0$

(b) Use the distribution property to find the value of: $\frac{7}{15} \times 4 + \frac{7}{15} \times 11$

(c) Find the value of k that makes the expression:

$6x^3 - 13x^2 - 13x + k$ is divisible by (3x - 5)

5 (a) The following table shows the distribution of marks for 30 students in an Exam.

Marks	4	5	7	8	9	10	Sum
Frequency	6	7	3	7	4	3	30

Represent the data by a broken line.

(b) 6 cards numberd from 1 to 6. One card is selected randomly.

Write the sample space, then find the probability of each of the following events:

1) A = getting a prime number.

2) B = getting a number smaller than 3.

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1 Complete:

(a) The multiplicative identity element in Q is = ...

(b) $|-2\frac{1}{2}| - |2\frac{1}{2}|$ = ...

(c) The degree of the algebraic term $5 x y^2$ is .....

(d) If $a + 2b = 5$, $c = 2$ then the value of $a + 2(b+c)$ = ...

(e) The mode for the numbers 6, 2, 5, 4, 6, 3 is = ...

2 Choose the correct answer:

(a) $3x^2 \times 4x^2$ = ……. $(7x , 7x^2, 12x^4 , 12x^2)$

(b) 0.57 = ... $(\frac{57}{100} , \frac{75}{1000} , \frac{57}{999} , \frac{19}{33})$

(c) If $(x - 6)(x + 6) = x^2 + k$. Then k = ... (36, -36, 12, -12)

(d) $\frac{5}{x-2} \in Q$ If $x \neq$ ..... (7, 2, 0, -2)

(e) The area of rectangle of length 3 xy and width 2 y is .....

(5 xy , 6 x^2y, 6xy^2 , 10 xy)

3 (a)Add: (5x + 2y - 1) and (2x - 5y - 3)

(b) Use the distribution property to find: $6 \times \frac{5}{17} + 10 \times \frac{5}{17} + \frac{5}{17}$

(c) Find the value of k that makes the expression:

$x^3 - 3x^2 - 25x + k$ is devisable by $(x^2 + 4x + 3)$

4 (a) Find the quotient of: $\frac{24a^3 + 9a^2 - 3a}{3a}$, ($a \neq 0$)

(b) Find two rational numbers between $\frac{1}{3}$ and $\frac{3}{4}$

5 (a) If $x = \frac{2}{3}$, $y = \frac{-3}{4}$, $z = 2$ find the numerical value of: $xy \div z$

(b) The following table shows the marks of Ahmed in mathematics in 5 months:

Month.	Sep.	Oct.	Nov.	Dec.	Jan.
Marks.	30	40	35	45	50

Calculate Ahmed's mean marks in 5 months.

1 Complete:

(a) The degree of algebraic term ($5 x^2 y$) is .....

(b) $\frac{2}{8} + \frac{-5}{8}$ = ...

(c) The mean of 2, 5, 8, 9, is .....

(d) $(x - 5)(x + 5)$ = ...

(e) If $|y| = 10$, then y = ... or .....

2 Choose the correct answer:

(a) The median of the numbers 8, 17 , 4 , 6 and 10 is ..... (11, 10, 6, 8)

(b) $-15 ab^4 \div 5 ab^3$ = ... Where $ab \neq 0$ (3b, -3b, -3ab, 3ab)

(c) The mode of the numbers 2, 5, 7, 6, 4 and 6 is ..... (5, 6, 7, 2)

(d) 0.5 in the form $\frac{a}{b}$ is = ... $(\frac{4}{9}, \frac{5}{9}, \frac{7}{9}, \frac{8}{9})$

(e) The number that has no multiplicative inverse is ..... (1, -1, 0, 2)

3 (a) using distributive property to find the value of:

$\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \frac{-3}{7}$

(b) Add: $3y^2 + 2xy - 5$ to $-2x^2 - 3xy + 3$

(c) **Divide:** $3x^2 - 4y - 20$ by $(y + 2)$

4 (a) If $a = \frac{3}{4}$, $b = \frac{-5}{2}$ Find in the simplest form the numerical value of: $\frac{a - b}{a + b}$

(b) Factorize by identifying the H.C.F: $12 a^2 b + 18 a^3 b^2$

5 (a) Simplify : $(x - z)^2 - 4$

(b) The following table shows the marks of Ali in 5 months:

The month.	Sep.	Oct.	Nov.	Dec.	Jan.
The marks.	30	40	35	45	50

Represent these data by broken line.

1 Choose the correct answer:

1) $x^3 \times x^2 =$ ……

a) x^6 b) x c) x^3 d) x^5

2) If $\frac{x}{y} = \frac{2}{3}$ then $\frac{3x}{2y}$ = ...

a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) 1 d) $\frac{3}{2}$

3) Express $\frac{5}{11}$ as a decimal

a) 0.45 b) 0.454 c) 0.45 d) 0.045

4) The Algebraic term $2x^3$ has ..... factors

a) 2 b) 3 c) 4 d) 5

5) The mean of these numbers 7, 4, 9, 2, 8 is .....

a) 5 b) 4 c) 8 d) 6

2 Complete:

(a) The mode of these numbers 4, 5, 3, 4, 6, 5, 4 is .....

(b) $18\ a^2 \div 3\ a$ = ...

(c) $\frac{3}{5} \times \frac{2}{7}$ = ...

(d) The median of these numbers 28, 31, 34, 36, 41 is .....

(e) $\frac{3}{7} \times$ ..... = 1

3 (a) Simplify: $(4x + 1)(2x + 3)$

(b) Factorize by identifying the H.C.F $4m^2(2x + y) - 3m(2x + y) - 7(2x + y)$

4 (a) Identify and write five rational numbers between $\frac{3}{5}$, $\frac{4}{5}$

(b) Find the sum of $(3x - 2y + 5)$ and $(x + 2y - 2)$

(c) **Divide:** $5x - x^2 + 6$ by $(x - 6)$

5 (a) If water flows through a pipe at the rate of $2\frac{1}{2}$ litres per minute, how many minutes will it take to fill three 20- litre containers?

(b) The frequency table shows the weights of 40 pupils.

Weights (kg)	30	35	40	45
Number of pupils	8	9	13	10

Draw a bar chart for the frequency table data.

Answer the following questions:

1 Choose the correct answer:

1) If : $(x + 5)(x - 5) = x^2 + k$, then k = ……

a) 5 b) -5 c) 10 d) -25

2) The mode of 4 , 5 , 10 , 4 and 7 is .....

a) 5 b) 10 c) 4 d) 7

3) If: $\frac{x}{y} = \frac{2}{3}$, then $\frac{3x}{2y}$ = ...

a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) $\frac{3}{2}$ d) 1

4) The rational number that lies at half way between: $\frac{1}{3}$ and $\frac{5}{6}$ is .....

a) $\frac{2}{3}$ b) $\frac{7}{12}$ c) $\frac{1}{2}$ d) $\frac{2}{7}$

5) $(4x - 3)(x - 4)$ = ...

a) $4x^2 - 19x - 12$ b) $4x^2 - 7$ c) $4x^2 - 12$ d) $4x^2 - 19x + 12$

2 Complete each of the following:

1) The number which it's additive inverse is itself is .....

2) If: $\frac{3}{5} \times x = 1$, then x = ...

3) The degree of $4x^3y^4$ is .....

4) The additive inverse of $\frac{1}{|-5|}$ is .....

5) If the mean of : x - 3, x, x + 3 is 6, then the value of x is .....

3 (a) Simplify: $(2a - 3b)^2 - 3(2a - b)(2a + b)$, then find the numerical value of the result if a = -1 and b = -2

(b) Use the distributive property to find the value of: $\frac{3}{13} \times 4 - \frac{3}{13} \times 3 - \frac{3}{13}$

(c) **Divide:** $8x^2 - 7x - 18$ by (x - 2)

4 (a) Factorize : $12x^3 - 6x^2 + 3x$

(b) Multiply : $(2x + 5) \times (2x - 5)$

(c) **Divide:** $27x^2y^4 - 15x^3y^3 + 9x^2y^2$ by $3x^2y^2$ where $xy \neq 0$

5 (a) If : $a = \frac{-1}{3}$, $b = \frac{3}{2}$, c = 2 find: a + b - c.

(b) The table shows the scores of one class in math quiz of maximum 10 scores:

Marks	5	6	7	8	9	10
Frequency	2	7	6	4	4	3

Represent the data using bar line graph.

Answer the following questions:

1 Choose the correct answer:

1) $\frac{3}{4}$ = ... %

a) 25 b) 50 c) 75 d) 100

2) $(-8\ y^{5}) \times (-7\ y^{4})$ = ...

a) -15 y b) $56y^{9}$ c) $-56y^{9}$ d) 56y

3) The median of the numbers 3, 8, 6, 6, 10, 2 is .....

a) 6 b) 7 c) 8 d) 10

4) If: $\frac{5}{x-3} \in Q$ then x ≠ .....

a) 5 b) 7 c) 2 d) 3

5) $(x^2 + x) \div x$ = ... where x ≠ 0

a) 0 b) x c) 2x +1 d) x +1

2 Complete the following:

a) The additive inverse of zero is .....

2) the mode of the values 3, 6, 19, 10, 13, 6, 19, 21, 6 is .....

3) $(x + 2)(x + 3) = x^2 +$ ..... + 6

4) $|-5| - |-2|$ = ...

5) The mean of 2, 5, 8, 9 is .....

3 (a) Find three rational numbers lying between $\frac{1}{3}$ and $\frac{3}{2}$**:**

(b) **Subtract:** 3x - 5y + 2z from y - 4z + 3x

(c) **Divide:** Find the value of k that makes the expression:

$x^3 + x^2 + 2x + k$ is divisible by (x - 1)

4 (a) factorize by taking out H.C.F: $10 \times y^2 - 5\ x^2\ y$

(b) Use the distributive property to find: $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

5 (a) find the quotient of dividing: $6x^3 - 12x^2 + 24\ x$ by 6 x where x ≠ 0.

(b) The following table shows the marks of Mohammed in math in 5 months:

Month.	Sep.	Oct.	Nov.	Dec.	Jan.
Marks.	45	35	45	40	50

Represent the previous data by broken line graph.

Answer the following questions:

1 Complete each of the following:

1) $\frac{3}{7} \times$ ..... = 1

2) $(x + 5)(x +$ .....$) = x^2 +$ ..... $+ 15$

3) The mean of these numbers 2, 5, 8 and 9 is .....

4) $\frac{2}{5} <$ ..... $< \frac{3}{5}$

5) The algebraic expression $4x^3 - xy + 5$ is of the ..... degree.

2 Choose the correct answer:

a) By using calculator $0.\dot{5}\dot{8}\dot{1} = \frac{.....}{.....}$ $(\frac{32}{55}, \frac{581}{1000}, \frac{581}{100}, 5\frac{81}{100})$

b) The algebraic term $2x^3$ has ..... factors. (2, 3, 4, 5)

c) The mode of the numbers 3, 6, 10, 13, 19, 21, 19 is ..... (21, 19, 13, 10)

d) If $x = \frac{4}{3}$ then (x-2) (x+2) equal ..... $(\frac{4}{9}, \frac{12}{9}, \frac{10}{9}, \frac{-20}{9})$

e) The cube of the sum of A and B is ..... $(A^3 + B^3, (A + B)^3, A^3 B^3, 3A + 3B)$

3 (a) Without using calculator find the value of:

$\frac{4}{9} \times 11 + \frac{4}{9} \times 16$

(b) What is the increase of $x^2 - 5x - 1$ than $3x^2 + 2x - 3$

4 (a) Find the rational number in half way between $\frac{3}{8}$ and $\frac{4}{9}$

(b) Simplify: $2x(x + 5) + x(6-x)$ then calculate the numerical value when $x = 2$)

(c) **Divide:** $4x^2 - 10x + 12$ by $(2x - 4)$

5 (a) Find the quotient of: $\frac{60x^6 - 48x^{10} - 12x^3}{12x^3}$

(b) Scores in a frequency distribution are arranged in order.

score	5	6	7	8	9	10	11	12
frequency	2	7	6	4	4	3	2	1

1- Find the median of the scores.

2- Find the mode of the scores.

1 Choose the correct answer:

1) $(x^2 + x) \div x$ = ... $(0, x, 2x + 1, x + 1)$

2) The mean of these numbers 2, 5, 8, 9 is ..... (6, 8, 9, 11)

3) $3a^4 b \times 5a^2 b^2 \times {}^2a^3$ = ... $(60a^{11} b^3 , 30a^2 b^2 , 30a^9 b^3)$

4) The rational number 0.57 in simplest form is .....

$(\frac{57}{100} , \frac{75}{99} , \frac{575}{1000} , \frac{19}{33})$

5) If $a \times \frac{b}{2} = \frac{a}{2}$, then b = ... $(\frac{a}{2} , 0 , a, 1)$

2 Complete:

1) $(x + 5)(x + ...) = x^2 + ... + 15$

2) $0 \div (-14)$ = ...

3) If $|x| = 7$ x = ... or .....

4) The mode of these numbers 3, 6, 10, 19, 19, 21 is .....

5) The multiplicative inverse of $\frac{2}{3}$ is .....

3 (a) Write the product: $(x + 4)(3x + 2)$

(b) If $x = \frac{3}{2}$, $y = \frac{1}{4}$, $z = -2$ then find the numerical value of $x - y \div z$

(c) **Divide:** $10x^2 - 70x + 120$ by $(5x - 15)$

4 (a) Find the quotient: $\frac{16a^3 b^2 - 24a^2 b^2}{4a^2}$

(b) Simplify: $3x - 5y - x + 2y$.

5 (a) Find the sum: $(3x - 2y + 5)$ and $(x + 2y - 2)$

(b) **Subtract:** $2x + 6y - 7$ from $3x - 5y + 2$

Answer the following questions:

1 Choose the correct answer:

1) The mode of 4, 5, 10, 4 and 7 is .....

a) 5 b) 10 c) 4 d) 7

2) The degree of the Algebraic term $2 \times y$ is ..... degree

a) first b) second c) third d) fourth

3) The value of $|-7| + |1| =$ .....

a) -8 b) 8 c) 6 d) -6

4) If $x = 2$ then $3x =$ .....

a) 6 b) 4 c) 5 d) 9

5) If $|k| = 7$, then k .....

a) 7 b) ± 7 c) -7 d) otherwise

2 Complete each of the following:

a) The multiplicative inverse of $\frac{1}{3}$ is .....

2) The mean of the values 3, 4, 5 and 6 is .....

3) $(2 \times - 3)(3 \times + 5) = 6x^2 +$ ..... -15

4) The coefficient of $-3 \times y^2$ is .....

5) $\frac{1}{x - 3} \in Q$, then $x \neq$

3 (a) Divide: $(64 \times^5 - 48 \times^3 + 8 \times^2)$ by $8 \times^2$ where $\times \neq 0$

(b) use the distributive $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(c) **Divide:** $x^3 - 25x$ by $(x + 5)$

4 (a) find three rational numbers between $\frac{3}{2}$ and $\frac{1}{3}$

(b) Subtract: $x + x^2 - 5$ from $2x^2 + x - 5$ then the value of result when $x = s$

5 (a) The following table shows the weights of 25 pupils of first prep

Weight in kg	32	33	34	35	36	37	38
No. of pupils	1	3	4	8	4	3	2

Represent this data using the bar line graph, then find the mode.