LaPIS Diagnostic Test Workbook - Mathematics

Name : Kanishka S

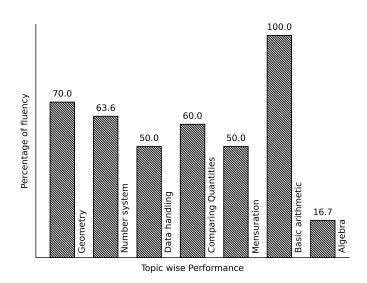
Class: 7

Section : A

School : AKV Public School

Login ID : AKV125

Kanishka S's Performance Report



Score: 23/40 Percentage: 57.5%

Kanishka S's Study Planner

| Date | Topics Planned | Q. Numbers | Teacher Remark | Teacher Sign | Parent Sign |
|------|-----------------|--------------|-------------------|---------------|-------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | Teacher's Fe | edback to Student | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | Class Teacher S | Signature | Princi | pal Signature | |

Mensuration

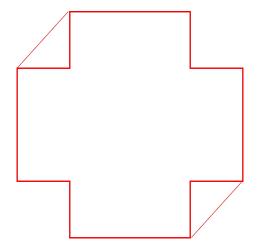
| Topics to be Improved | | |
|-----------------------|-----------------------|--|
| Perimeter | Perimeter of triangle | |

Hi, here in this video you will learn **Perimeter**



Question: 1

Highlight the perimeter in the given image.

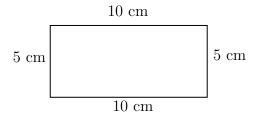


| 1 | n | SI | ,, | o | n. |
|------------------|----|-----|----|-----|----|
| \boldsymbol{H} | Ή. | S 7 | 17 | ייש | |

Perimeter is the _____ (outer / inner) boundary of the shape

Question: 2

Find the perimeter of the given figure.



Answer:

Sides of the given shape = _____

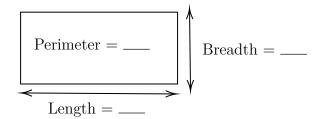
Perimeter of a shape is _____ (sum / difference) of _____ (all/ opposite) sides.

Perimeter of the given shape = _____

Question: 3

Find the length of the rectangular floor if its perimeter is 60 ft and breadth is 3 ft.

Answer:



Shape of the floor is _____ and its perimeter formula is _____. Given:

floor perimeter =
$$___$$
, and breadth = $___$.
Perimeter of the floor = $2(___+ ___)$.

Therefore, length of the rectangular floor is ______.

Data handling

| Topics to be Improved | | | |
|----------------------------------|-----------------------|--|--|
| Arithmetic mean, mode and median | Mean, Median and Mode | | |
| Range | Finding the range | | |

Hi, here in this video you will learn Mean, Median, Mode



Question: 4

Find the mode of the following data: 5, 15, 23, 5, 32, 44, 72, 55, 6, 3, 5, 65, 45, 67, 24, 19 and 98.

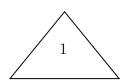
Answer:

Mode is the number that occurs _____ (frequently / rarely) in a given list of observations.

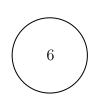
Arranging the data in ascending order: _____ occurs most number of times. Then, mode of the given data is _____

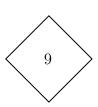
Question: 5

Which shape contains median of the given data 3, 5, 6, 2, 7, 9, 6, 4 and 1









Answer:

Median is the _____(first/central/last) value of a data when the data is arranged in ascending or descending order.

Arrange the given data in ascending order: _____

Central value of the given data is ______ and it is the _____ of a data.

Question: 6

| Marks scored | 100 | 90 | 80 | 70 |
|--------------------|-----|----|----|----|
| Number of students | 4 | 5 | 2 | 1 |

 $Mean = \underline{\hspace{1cm}}$, $Median = \underline{\hspace{1cm}}$ and $Mode = \underline{\hspace{1cm}}$.

| Answer | |
|--------|---|
| Answei | • |

of all observation number of observation . Mean = -

Here s sum of all observation = ______, number of observation = ______

Therefore, mean = _____

Arrange the data in ascending order : _____

Here, $median = \underline{\hspace{1cm}}$, $mode = \underline{\hspace{1cm}}$.

Hi, here in this video you will learn Range



Question: 7

Range of the data = ______ - _____

Answer:

The difference between highest value and lowest value is ______.

Example: Find the range of 10, 5, 30, 23, 54, 39 and 16

 $Highest value = \underline{\hspace{1cm}}$, $Lowest value = \underline{\hspace{1cm}}$.

 $Range = \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}.$

Question: 8

Circle the correct range for the following data 31, -20, 35, -38, 29, 0, 43, -25, 51, 14, 9

$$-20+51$$
 $\frac{-38-51}{2}$ $51+38$

$$\frac{-38-5}{2}$$

$$51 + 38$$

.....

......

......

$$\frac{51+20}{2}$$

Answer:

Arranging the data in ascending order, _____

In the given data,

 $Highest \ value = \underline{\hspace{1cm}}$, $Lowest \ value = \underline{\hspace{1cm}}$, $Range = \underline{\hspace{1cm}}$

Question: 9

Find the range of first 10 multiple of 5.

Answer:

First 10 multiple of 5 =

Therefore,

 $Highest \ value = \underline{\hspace{1cm}}$, $Lowest \ value = \underline{\hspace{1cm}}$, $Range = \underline{\hspace{1cm}}$

Geometry

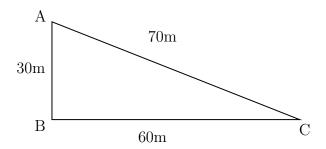
| Topics to be Improved | | |
|---|---|--|
| Sum of lengths of two sides of a triangle Sum of two sides of a triangle | | |
| Right angle triangle and pythagoras property Basics of Pythagoras property | | |
| Faces vertex and edges | Idenfication of faces, edges and vertices | |

Hi, here in this video you will learn Sum of the length of sides of the triangle



Question: 10

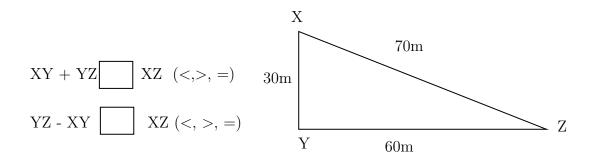
Find the greatest distance to reach C from A in the given diagram.



Answer:

| The sides of the given triangle are The possible way to reach point C from point A | |
|--|---|
| $\frac{\text{Side AC} = \dots}{\text{Side AC}}$ | |
| $Side AB + BC = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$ | = |
| Therefore, the greatest distance to reach C from | A in the given diagram is |
| Question: 11 (Sum of / Difference between) than the length of the third side. | ne length of any two sides of a triangle is smaller |
| Answer: | |
| There are sides in a triangle. | |
| The sum of the two sides of a triangle is | than the other side of the triangle. |
| The difference of the two sides of a triangle is | than the other side of the triangle. |

Example: In triangle XYZ,



| Question: 12 | |
|--------------|--|
| 4 | |

The lengths of two sides of a triangle are 7 cm and 10 cm. Between which two numbers can length of the third side fall?

Answer:

- 1. The sum of the two sides of a triangle is ______ than the third side of the triangle. Therefore, the third side should be _____ (less/ greater) than sum of other two sides. Here, sum of the two sides = ____ + ___ = ___ Therefore, the length of the third side is less than _____
- 2. The difference of the two sides of a triangle is ______ than the third side of the triangle.

 Therefore, the third side should be ______ (less/ greater) than sum of other two sides.

 Here, difference of the two sides = _____ ___ = _____

 Therefore, the length of the third side is greater than ______

Therefore, length of the third side is greater than ______ but less than _____.

Hi, here in this video you will learn Pythagoras property



Question: 13

In a right angled triangle, square of the _____ = sum of the squares of the legs.

Answer:

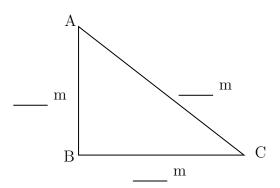
Pythagoras theorem is only applicable for ______ triangle.

Longest side of the triangle is _____ (hypotenuse/ legs) and other two sides are called _____ (hypotenuse/ legs).

Pythagoras theorem states that _____ ...

Question: 14

Find the hypotenuse of the triangle ABC if base is 12 m and altitude is 5 m.



Pythagoras theorem states that square of the _____ = sum of the squares of its

 $Given: Base = \underline{\hspace{1cm}}, Altitude = \underline{\hspace{1cm}},$

Base and altitude are _____ (hypotenuse/ legs) of the triangle.

By Pythagoras theorem,
$$(____)^2 = (___)^2 + (___)^2$$

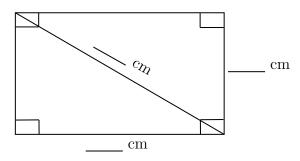
 $= __ + ___$

Therefore, hypotenuse of the triangle is _____.

Question: 15

Find the length of the rectangle, if breadth is 3 cm and diagonal is 5 cm.

Answer:



Pythagoras theorem states that square on the _____ = sum of the squares on

Is Pythagoras theorem applicable in rectangle? $_$ (yes/ no).

Given: breadth = _____, length of diagonal = _____

Therefore, diagonal of the rectangle is _____

Hi, here in this video you will learn Basics of 3D model



| A point at which two or more lines segments meet is called(Vertex/ edges/ faces). |
|---|
| Answer: |
| has two end point (line/line segment/ray). A is a point where two or more line segments meet(Vertex/ edges/ faces). Mark the vertices in the diagram, |
| |
| Question: 17 |
| Mark and find the number of vertices, edges and faces in a cube. |
| |
| |
| Answer: |
| Mark the vertex, edges and faces in a cube. |
| |
| Count the number of vertex, edges and faces in a cube. Cube have vertices, edges and faces. |
| Question: 18 |
| How many vertices, edges and faces does dices have? |



|--|

| The shape of d | lice is | · | |
|----------------|----------|-----------|-------|
| Dices have | vertices | edges and | faces |

Number system

| Topics to be Improved | | |
|--|---|--|
| Operations on rational numbers | Subtraction of rational numbers | |
| Positive and negative rational numbers | Identification of positive rational numbers | |
| Fractions | Division of fraction | |
| Exponents | Solving exponents | |

 Hi , here in this video you will learn **Operation on rational numbers**



Question: 19

Solve: $\frac{-3}{3} + \frac{1}{3}$

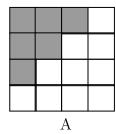
Answer:

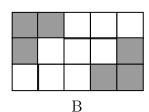
Fractions with same denominators are called ______ (like/ unlike) fractions. Fraction can be added only if they are ______ (like/ unlike) fractions.

$$\frac{-3}{3} + \frac{1}{3} = \frac{-3}{3} = \frac{1}{3}$$

 $\underline{Question:\ 20}$

Find the addition of shaded part of box A and shaded part of box B.





 $\underline{Answer:}$

Total number of square in box $A = \underline{\hspace{1cm}}$. Number of shaded square in box $A = \underline{\hspace{1cm}}$.

Shaded part of box A in fraction = _____

Total number of square in box $B = \underline{\hspace{1cm}}$.

Number of shaded square in box $B = \underline{\hspace{1cm}}$.

Shaded part of box B in fraction = $_$

Shaded part of box A + Shaded part of box B = $___$ + $___$ = $___$

Question: 21

Find the missing values in the given figure.

$$= \begin{array}{c} \begin{array}{c} \\ \\ \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \end{array} \begin{array}{c} \\ \end{array} \begin{array}{c}$$

Answer:

One litre = $\underline{\hspace{1cm}}$ ml $\frac{7}{10}$ of one liter = $\frac{7}{10}$ x $\underline{\hspace{1cm}}$ ml = $\underline{\hspace{1cm}}$ ml

Given: $1 = \frac{7}{10} +$ _____ Transposing $\frac{7}{10}$ to other sides, 1 _____ $\frac{7}{10} =$ ______

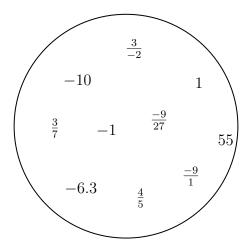
Therefore, result is _

Hi, here in this video you will learn Positive and Negative rational numbers

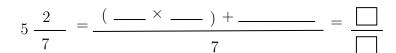


Question: 22

Segregate positive and negative rational number.



| • If both the numerator and the denominator of a rational number are |
|---|
| • If either the numerator and the denominator of a rational number are negative, then it is (positive/negative) rational number. |
| In the given circle, positive rational numbers are and negative rational numbers ar |
| Question: 23 |
| $\frac{-3}{-4}$ is a (positive /negative / neither positive nor negative) rational number. |
| Answer: |
| -3 is a number, -4 is a number. |
| -3 is a number, -4 is a number. Division of $\frac{-3}{-4} = \boxed{}$ and this rational number. |
| (Positive / Negative / Neither positive nor negative rational number) |
| Question: 24 |
| The product of a positive rational number and a negative rational number isrational number. (Positive/ Negative/ neither positive nor negative) |
| Answer: |
| Examples for positive rational numbers: Examples for negative rational numbers: Positive rational number × Negative rational number = × = and this is rational number |
| Hi, here in this video you will learn Division on fractions |
| Question: 25 |
| Find the shape which contains the improper fraction of $5\frac{2}{7}$. |
| $\begin{array}{ c c c c c }\hline\hline 10\\\hline 35\\\hline \end{array}$ |
| Answer: |
| $5\frac{2}{7}$ is a (proper/mixed) fraction. Here, 5 is , 2 is and 7 is |
| To convert mixed fraction into improper fraction, $\frac{\text{(Whole} \times \underline{\hspace{1cm}}) + \text{Numerator}}{\text{Denominator}}$ |



| Question: | 26 |
|-----------|----|
|-----------|----|

Solve: $\frac{1}{3} \div \frac{14}{3}$

Answer:

To divide a fraction by another fraction, multiply the dividend by _____ (same / reciprocal) of the divisor. Here, dividend = _____ and divisor = ____.

$$\frac{1}{3} \div \frac{14}{3} = \frac{1}{3} \times \square = \square$$

......

Question: 27

Find the half of the fraction $\frac{12}{40}$.

Answer:

To find half of a number, divide the number by ____

$$\frac{12}{40} \div \underline{} = \frac{12}{40} \times \underline{} = \underline{}$$

Then the answer is ___

Hi, here in this video you will learn Exponents and power



Question: 28

Find the exponential form of 1000.

Answer:

____ (Exponents/Base) tells us how many times a number should be multiplied by itself to get the desired result.

Exponents is also called as _____ (Base / Power).

1000 can be written as = $10 \times$ 10 is raised to the power of $\underline{\hspace{1cm}} = (10)^{\underline{\hspace{1cm}}}$

(ii) k is raised to the power of 5: Base = ____, Power/Exponent = ____,

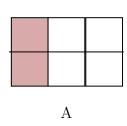
exponential form = ____.

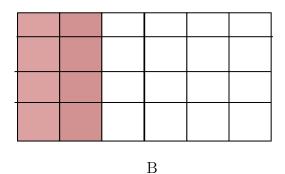
Comparing Quantities

| Topics to be Improved | |
|---------------------------------------|---------------------|
| Equivalent ratios Basic of proportion | |
| Percentage | Basic of percentage |

| Hi, here in this video you will learn Basics of proportion | |
|---|--------|
| Question: 31 | |
| If a:b and c:d are equivalent ratio, then it can be expressed as | |
| $\underline{Answer:}$ | |
| A (proportion / ratio) is used to express (one/two) equivalent r Standard form to express proportion is | atios. |
| $Question: \ 32$ | |

Find the ratio of shaded part to unshaded part of A and B. Are the two ratios equivalent ?





Answer:

| Shaded part of $A = \underline{\hspace{1cm}}$, Unshaded part of $A = \underline{\hspace{1cm}}$. |
|---|
| Ratio of shaded to unshaded parts of A is Fractional form = |
| Shaded part of $B = \underline{\hspace{1cm}}$, |
| Unshaded part of $B = \underline{\hspace{1cm}}$. |
| Ratio of shaded to unshaded parts of B is |
| Fractional form $=$ |
| Fraction form of A (equal/ not equal) to Fraction form of B. |
| |
| Question: 33 |

If a: b:: c: d is proportion, shade the correct expression

| $\boxed{ a = \frac{bc}{d} } \boxed{ \boxed{ c = \frac{ad}{b} } } \boxed{ \boxed{ ad=cd} }$ |
|--|
| Answer: |
| Two equivalent ratio which are proportion, it can be written as a : b :: c : d or = (in fraction) . First and fourth term are called and second and third term are called In proportion, product of extreme terms is (equal to/ not equal to) product of middle terms. Therefore, a \times d =, then a = and c =, |
| Hi, here in this video you will learn Basics of percentage |
| Question: 34 |
| 2% can be written as |
| Answer: |
| Percentages are numerators of fractions with denominator $2\% = { }$ |
| Question: 35 |
| Arun attended the LaPIS test for 100 marks and got 75% marks. What is the mark scored by Arun? |
| Answer: |
| Arun attended LaPIS test for marks. He got marks. |
| 75 % can be written in fraction form |
| Then the mark scored by Arun = Total mark \times 75% = \times = |
| Question: 36 |

apples.

There are 25 apples in a basket in which 10 of them are rotten. Find the percentage of rotten

| There are $_$ apples in a b | asket. | |
|--------------------------------|---------------------------|--|
| Number of rotten apples are | · | |
| Fraction form of rotten apples | in a basket $=$ \square | |
| Convert it into a percent— | v % – | |

Algebra

| Topics to be Improved | | |
|---|--|--|
| subtraction of algebraic expressions | subtraction of algebraic expressions | |
| Basics of simple equation | Formating of simple equation | |
| Monomials, binomials, trinomials and polynomials | Types of algebraic expression | |
| Addition and subtraction of algebraic expressions | Like terms and Unlike terms | |
| Terms of an expression | Identification of terms in an expression | |

Hi, here in this video you will learn Subtraction on expression



| Question: 37 | |
|--------------|--|
|--------------|--|

Find the sum of two expressions a + b + c and b + c + d

Answer:

| The given two expressions are and |
|--|
| The two terms will get added only if they are(Like/ Unlike) terms |
| The sum of two expressions $=$ $\underline{\hspace{1cm}}$ $+$ $\underline{\hspace{1cm}}$. |
| The answer is |

| | School A | School B |
|--------------------|----------|----------|
| Number of boys | 100b | 250b |
| Number of girls | 150g | 200g |
| Number of teachers | 25t | 45t |

- (i) Total number of boys in school A and B is _____
- (ii) Total number of students in school B is _____
- (iii) How many more teachers are there in school B than school A? _____

Answer:

(i) Number of boys in school $A = \underline{\hspace{1cm}}$,

Number of boys in school $B = \underline{\hspace{1cm}}$

Total number of boys in school A and school B is _____ + ___ = ____.

(ii) Number of boys in school $B = \underline{\hspace{1cm}}$,

Number of girls in school $B = \underline{\hspace{1cm}}$.

Total number of students in school B is $___$ + $___$ = $___$.

(iii) Number of teachers more in school B than school A = Teachers in school B - Teachers in school A = $__$.

Question: 39

Solve the following:

$$\begin{array}{ccc}
 & 3a - 5b \\
 & 5a - 7b \\
 & -2a - \underline{\hspace{1cm}}
\end{array}$$

Answer:

The two terms will get added only if they are _____ (like/unlike) terms.

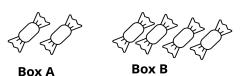
$$\begin{array}{c|c}
13x + \underline{\hspace{1cm}} \\
(+) & 12x + 10y \\
\underline{\hspace{1cm}} + 25y
\end{array}$$

$$\begin{array}{r}
 3a - 5b \\
 \hline
 (-) \quad 5a - 7b \\
 \hline
 -2a - \underline{\hspace{1cm}}
 \end{array}$$

 $\operatorname{Hi},$ here in this video you will learn $\operatorname{\bf Solving}$ an equation using application



Question: 40



......

Box B contains _____ times the number of chocolates in Box A

Answer:

Box A contains _____ chocolates.

Box B contains _____ chocolates.

No. of chocolates in Box B = $___$ × (No. of chocolates in Box A)

Answer: Four times of $m = \underline{\hspace{1cm}}$ Subtracting four times of m from $4 = \underline{\hspace{1cm}}$ The equation is _____ Question: 42 Compare the given two statements (<,>,=)Sum of 2a and 9 | Add 9 to the product of a and 2Answer: Sum of 2a and $9 = \underline{\hspace{1cm}}$ Product of a and $2 = \underline{\hspace{1cm}}$ Add 9 to the product of a and 2 =Therefore, sum of 2a and 9 Add 9 to the product of a and 2Hi, here in this video you will learn **Types of expression** Question: 43 There are _____ terms in the expression 7x + 3y + m + 5. Answer: In algebraic expression, _____ (variables/ terms) are connected together with operations of addition. The terms in the expression are $____$, $____$, and $____$. Therefore, there are ______ terms in the expression. Question: 44 Classify the following expression into monomial, binomial and polynomial. 1. 7m + n + 22. $8x^2 + 0$ 3. 7xy + 4m

Write the equation for the following statement.

Subtracting four times of m from 4 is n

| 1. The terms in expression $8x^2 + 0$ are Here, expression has term and it is a | |
|---|---------------|
| 2. The terms in expression $7xy + 4m$ are Here, expression has term and it is a | |
| | |
| 3. The terms in expression $7m + n + 2$ are Here, expression has term and it is a | |
| Question: 45 | |
| $5m^2 + m + 0$ is a expression. (Monomial/ Binomial/ Trinomial) | |
| Answer: | |
| The terms in expression $5m^2 + m + 0$ are Here, the expression has terms and it is called a | _ expression. |
| Hi, here in this video you will learn Addition on expression | |
| Question: 46 | |
| Shade the like terms. | |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 9a |
| $\underline{Answer:}$ | |
| Given terms are | |
| Two or more term have (same/ different) variables is called like Here, like terms are | e terms. |
| <u>Question: 47</u> | |
| Complete the expression $7r^2 + r \Box - 2 \Box = \underline{r^2}$ | |
| Answer: | |
| (Like / Unlike) terms can be added or subtracted. | |
| $_{7r^2+ r} \square_{-2} \square = (7 + \ 2)_{r^2} = _$ | |
| Question: 48 | |
| Sam have 3a chocolates and 9v icecream. Ram have 7a chocolates and 5v icecre | |

| (| (i) | Total | chocolates | Ram | and Sam | have · | |
|---|-----|-------|------------|-----|---------|--------|--|
| ١ | 11 | rotai | CHOCOlates | паш | and Dam | mave. | |

(ii) How many icecreams Sam have more than Ram: ______.

Answer:

| | Chocolates | Icecream |
|-----|------------|----------|
| Sam | | |
| Ram | | |

(i) Total chocolates Ram and Sam have:

 $Ram's \ chocolate + Sam's \ chocolates = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

(ii) How many icecreams Sam have more than Ram:

_____ icecream - ____ icecream = ____ - __ = ____

Hi, here in this video you will learn Terms of an expression



Question: 49

Separate the variables and constants for all the terms given in the box

......

Answer:

In algebraic expression, variables are represented by _____ and Constant is a

| Terms | Constants | Variables |
|-------|-----------|-----------|
| | | |
| | | |
| | | |

Question: 50

Mark the expression that contains two terms.

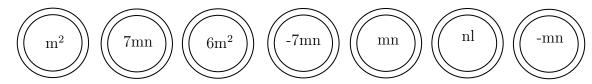
$$3x + 5$$
 $12a$ $4xy$ $12a + b + 1$ $7m + 0$

| The terms in the expression $3x + 5$ is/are |
|--|
| The terms in the expression $12a$ is/are |
| The terms in the expression $4xy$ is/are |
| The terms in the expression $12a + b + 1$ is/are |
| The terms in the expression $7m + 0$ is/are |

Question: 51

Shade the outline of circle that contains the term of the given expression.

$$6m^2 - 7mn + nl$$



Answer:

In algebraic expression, ______ (variables/ terms) are connected together with operations of addition.

Here, _____, ____, are the terms of the given expression.