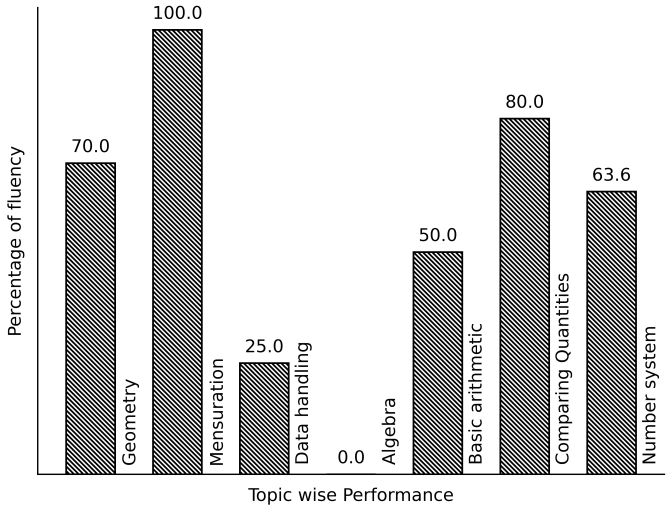
LaPIS Diagnostic Test Workbook - Mathematics

Name	**:**	**Sanjaysarguru S**
Class	**:**	**7**
Section	**:**	**B**
School	**:**	**AKV Public School**
Login ID	**:**	**AKV147**

Sanjaysarguru S's Performance Report



Score: 22/40 **Percentage: 55.0%**

Sanjaysarguru S's Study Planner

Date	Topics Planned	Q. Numbers	Teacher Remark	Teacher Sign	Parent Sign

Teacher's Feedback to Student

Class Teacher Signature

Principal Signature

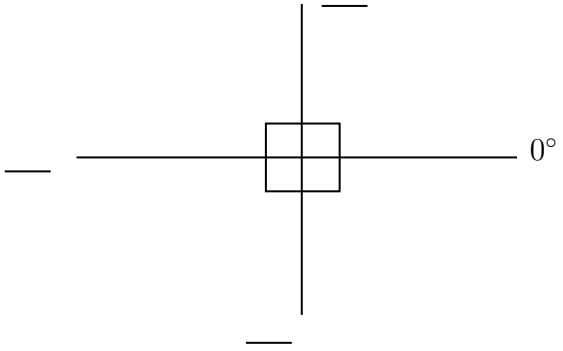
Basic arithmetic

Topics to be Improved	
Types of angles	Identification of types of angles

Hi, here in this video you will learn **Types of Angles**

Question: 1

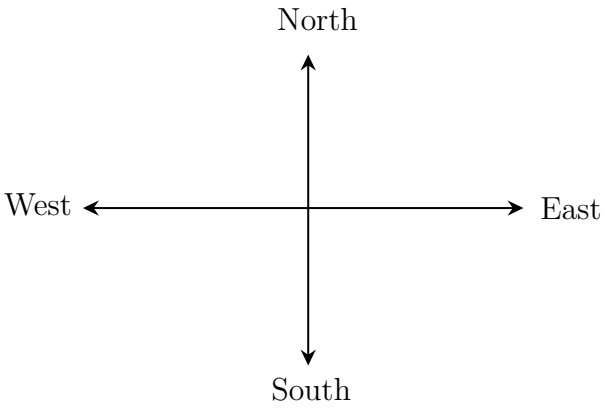
Find the angles.



Answer:

The angle ranges from ___° to ___°.
The angle perpendicular to 0° is ___°.
The straight line measures ___°.

Question: 2



The angle formed between the directions

(i) West and East is _____ angle.

(ii) North and East is _____ angle.

(iii) East and South is _____ angle.

Answer:

The angle formed between West and East is ___° and it is called _____ angle.
The angle formed between North and East is ___° and it is called _____ angle.
The angle formed between East and South is ___° and it is called _____ angle.

Question: 3 .....

The addition of straight angle and right angle is _____ angle.

Answer:

The measurement of straight angle is _____°
The measurement of right angle is _____°.
Straight angle + Right angle = _____ + _____ = _____
It is called as _____ angle.

Data handling

Topics to be Improved	
Chance of probability	Basis of probability, Sample space in probability
Arithmetic mean, mode and median	Mean, Median and Mode

Hi, here in this video you will learn **Basics of probability**

Question: 4 .....

Identify the sure events and impossible events

(i) The sun rises in the west.

(ii) Water is colourless.

(iii) Clock rotates in clock wise direction.

(iv) Ball is square in shape.

Answer:

Events that always occur are called _____ (sure/ impossible) events.
Events that cannot occur are called _____ (sure/ impossible) events.
Here, The sun rises in the west is _____ event. Water is colourless is _____ event.
Clock rotates in clock wise direction is _____ event. Ball is square in shape is _____ event.

Question: 5 .....

Probability of sure events is _____ (greater / smaller) than probability of impossible events.

Answer:

Probability of sure event = _____(0/ 1/ any number).
Probability of impossible event = _____ (0/ 1/ any number).
Therefore, Probability of sure event _____ Probability of impossible event.

Question: 6 .....

Raju has pencil, an eraser, a scale, sharpener, colour pencil and protractor in his box. What is the probability of getting a pen from his box.

Answer:

Things Raju have _____
Does Raju have pen in his box,_____ (Yes/ No).
Then probability of getting pen from his box is _____ (0/1)

Hi, here in this video you will learn **Basics of probability**

Question: 7 .....

Which of the following contains list of all possible outcomes.

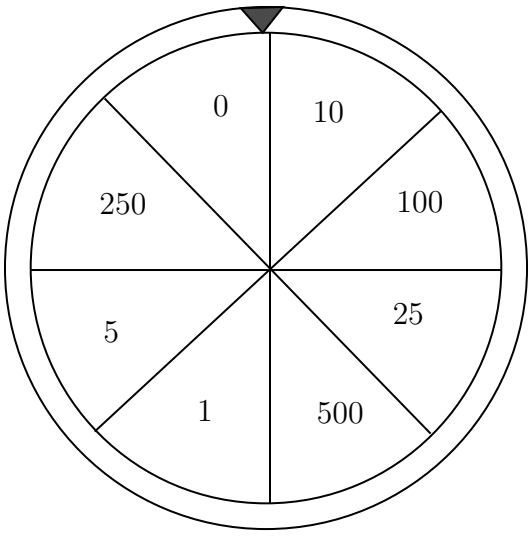
Probability	Sample space	Sure events	Impossible events

Answer:

Probability is the measure of _____ (chance /number) of an events happenings.
Sample space consists of _____ (possible/ impossible) outcomes.
Sure events always _____ (occurs/don't occurs).
Impossible events _____ (occurs/ don't occurs).
Therefore, _____ contains list of possible outcomes.

Question: 8 .....

Write the possible outcomes while spinning the given wheel.



Answer:

Outcomes are _____ (possible/impossible) results of an experiment.
The possible outcomes while spinning wheel are ₹0, ₹10, _____

Question: 9 .....

A bag contains three balss of colour blue, green and red. Write the possible outcomes if two balls are taken out.

Answer:

A bag contains _____, _____ and _____ balls.
If one of the ball is blue in colour, then other ball can be _____ or _____
If one of the ball is green in colour, then other ball can be _____ or _____.
If one of the ball is red in colour, then other ball can be _____ or _____.
Therefore, if two balls are taken out then possible outcomes are blue + _____ ,
_____ + _____, _____ + _____,

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

Question: 10 .....

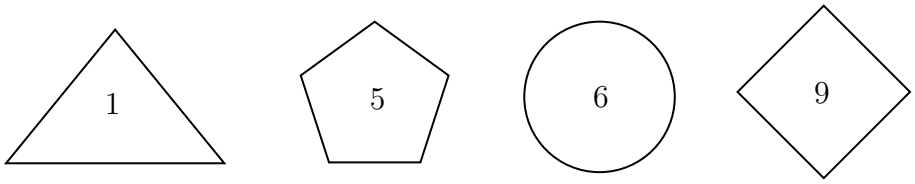
Find the mode of the following data: 5, 15, 23, 5, 32, 44, 72, 55, 6, 3, 5, 65, 45, 67, 24, 19 and 98.

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: 11 .....

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: 12 .....

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

Mean =_____ , Median = _____ and Mode = _____.

Answer:

Mean = $\frac{\text{\_\_\_\_\_ of all observation}}{\text{number of obserivation}}$.

Here s sum of all observation = _____ , number of observation = _____
Therefore, mean = _____
Arrange the data in ascending order : _____
Here, median = _____ , mode = _____.

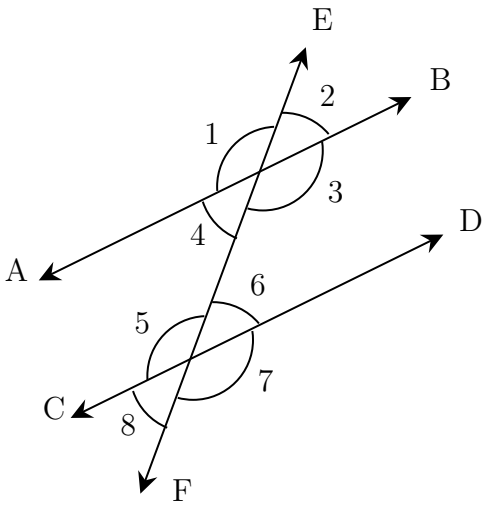
Geometry

Topics to be Improved	
Transversal angle made by transversal	Basics of Transversal angle
Faces vertex and edges	Idenfication of faces,edges and vertices
Criteria for congruence of triangle	Idenfication of criteria of congruence of triangles

Hi, here in this video you will learn **Basics of Transversal angle**

Question: 13 .....

In given diagram, $\angle$ 1 and $\angle$ 7 are _____ (alternate / corresponding) angles.

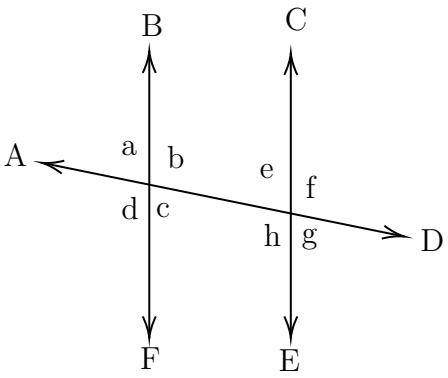


Answer:

A line that intersects two or more lines at distinct points is called a _____ (transversal/ Intersecting line).
Angle that lies on different vertices and on the opposite sides of transversal is _____ angles.
Angle that lies on different vertices and on the same sides of transversal is _____ angles.
Therefore, $\angle$1 and $\angle$7 are _____

Question: 14 .....

Find the transversal, alternate angles and corresponding angles in a given diagram.



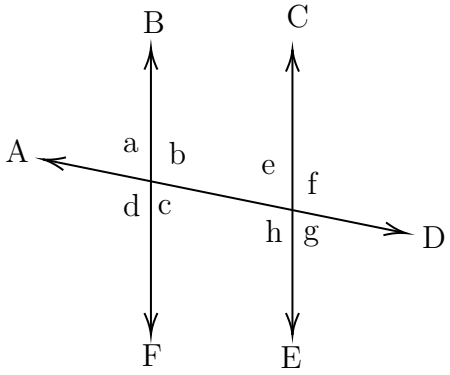
Answer:

A line that intersects two or more lines at distinct points is called a _____ (transversal/ Intersecting line).
In a given diagram, _____ is a transversal line. (BF/AD/CE)

Alternate angles	Corresponding angles
∠a and ∠g , ∠b and ∠h,	∠a and ∠e, ∠b and ∠f,

Question: 15 .....

Find ∠e and ∠g if ∠a = 30°.



Answer:

When parallel lines cut by a transversal,

(i) Alternate angles are _____ (equal / not equal).

(ii) Corresponding angles are _____ (equal / not equal).

Here, alternate angle of ∠a is _____ and its value is _____.
Corresponding angle of ∠a is _____ and its value is _____.

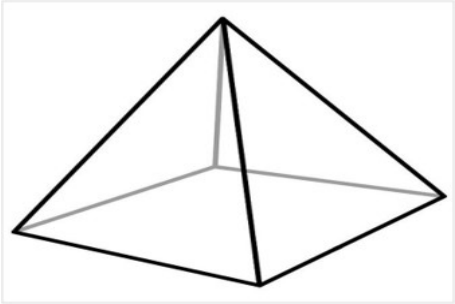
Hi, here in this video you will learn **Basics of 3D model**

Question: 16 .....

A point at which two or more lines segments meet is called _____(Vertex/ edges/ faces).

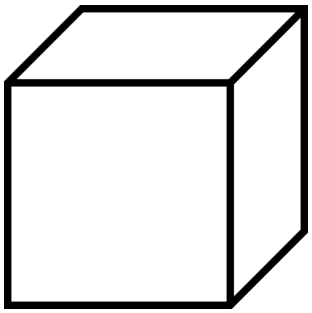
Answer:

_____ 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,



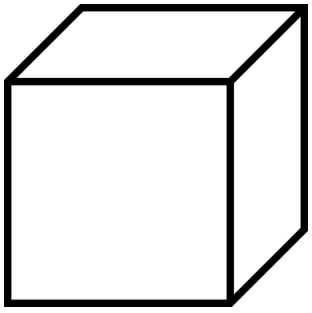
Question: 17 .....

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?

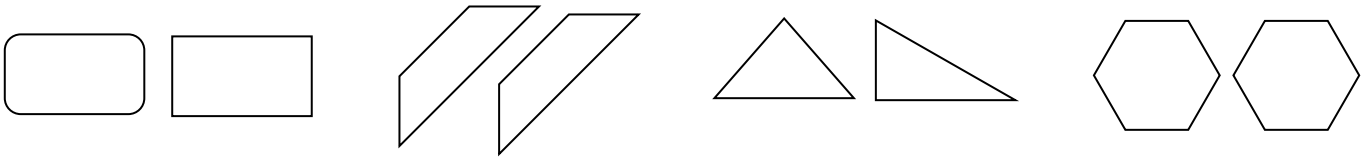
Answer:

The shape of dice is _____.
Dices have _____ vertices, _____ edges and _____ faces.

Hi, here in this video you will learn **Criteria of congruence**

Question: 19 .....

Circle the groups that contain congruent images.



Answer:

Two geometrical shapes are said to be congruent if they are _____ (identical/non-identical) in shapes and size.
Example: Square and Rectangle are _____ (congruent/not congruent).

Question: 20 .....

If the three sides of the triangle are equal to the corresponding sides of the other triangle, then two triangles are congruent under _____ (SSS/ASA/SAS) criteria .

Answer:

Two triangle are _____ (congruent/not congruent) if they are identical in shapes and size.
Criteria for congruence of triangles are SSS, _____ and _____.

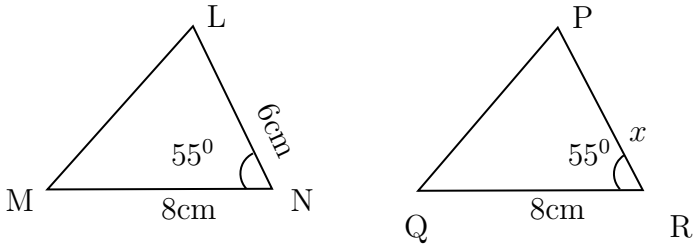
1. In SSS Congruence criteria - ___ (2/ 3/ 5) sides of the triangle are _____ (equal/ not equal) to the three corresponding sides of the other triangle.
2. In SAS Congruence criteria - ___(2/ 3/ 5) sides and _____ (one/two) angle between them are equal to the corresponding sides and the included angle of the other triangle.

3. In ASA Congruence criteria - ___ (2/ 3/ 5) angles and _____ (one/two) side between them are equal to the corresponding angles and the included side of the other triangle.

SSS	_____ sides and _____ angles are equal
SAS	_____ sides and _____ angles are equal
ASA	_____ sides and _____ angles are equal

Question: 21 .....

The triangles LNM and PRQ are congruent by SAS criteria. Then find the side PR



Answer:

The given two triangles satisfy _____ criteria of congruence.
By SAS congruence criteria, MN = _____ , _____ and $\angle N$ = _____
The side MN=8 cm in ΔLNM is equal to the side _____ in $\triangle PRQ$
The common included angle in $\triangle$ LNM and $\triangle PRQ$ are _____
The side PR is equal to the side in _____ ΔLNM.
Therefore, length of side PR = _____

Number system

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

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

Question: 22 .....

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 $= 10 \times$ _____ $\times$ _____
10 is raised to the power of ___ $= (10)^{\text{___}}$

Question: 23 .....

Find the value of $(-2)^3$.

Answer:

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

In this exponential form $(-2)^3$, base = ___, power = ___.
$(-2)^3 =$ ___ $\times$ ___ $\times$ ___ $=$ ___.

Question: 24 .....

(i) Tenth power of 100 is ___ ($(10)^{100}$ or $(100)^{10}$).

(ii) k is raised to the power of 5 is ___ ($(k)^5$ or $(5)^k$).

Answer:

Exponential form = $(Base)$——

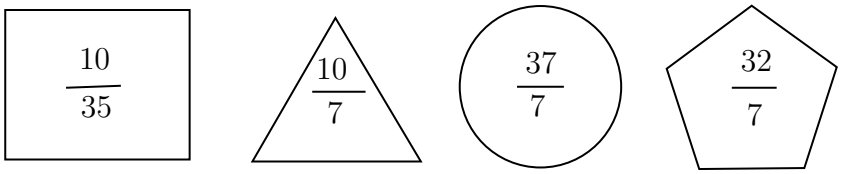
(i) Tenth power of 100 : Base = ___, Power/Exponents = ___, exponential form = ___.

(ii) k is raised to the power of 5 : Base = ___, Power/Exponent = ___, exponential form = ___.

Hi, here in this video you will learn **Division on fractions**

Question: 25 .....

Find the shape which contains the improper fraction of $5\frac{2}{7}$.



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, $\frac{(\text{ Whole} \times \text{\_\_\_\_\_}) + Numerator}{Denominator}$

$$5\frac{2}{7} = \frac{(\text{\_\_\_} \times \text{\_\_\_}) + \text{\_\_\_\_\_}}{7} = \frac{\square}{\square}$$

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 = _____.

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

Question: 27 .....

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

Answer:

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

$$\frac{12}{40} \div \_\_\_\_ = \frac{12}{40} \times \frac{\square}{\square} = \frac{\square}{\square}$$

Then the answer is _____

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

Question: 28 .....

Fill in the boxes to make the given expression correct.

$$\frac{1}{5} \div \frac{14}{15} = \frac{1}{\square} \times \frac{\square}{\square}$$

Answer:

When any fraction is divided by a fraction, we multiply the dividend by the _____ (same/reciprocal) of the divisor.

Here, dividend = _____ and divisor = _____

$$\frac{1}{5} \div \frac{14}{15} = \frac{1}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$$

Question: 29 .....

Solve: $\frac{18}{7} \div 0.6$

Answer:

Fraction form of 0.6 = _____,
when any fraction is divided by a fraction, we multiply the dividend by the _____ (same/reciprocal) of the divisor. Here, dividend = _____ and divisor = _____.

$$\frac{18}{7} \div \frac{\square}{\square} = \frac{18}{7} \times \frac{\square}{\square} = \frac{\square}{\square}$$

Question: 30 .....

Find the missing number in the expression $\frac{8}{3} \div \frac{16}{\square} = 2$

Answer:

$$\frac{8}{3} \div \frac{16}{\square} = 2$$

$$\frac{8}{3} \times \frac{\square}{16} = 2$$

Transposing 8/3 to RHS,

$$\frac{\square}{16} = 2 \square \frac{8}{3}$$

$$\frac{\square}{16} = 2 \times \frac{\square}{\square}$$

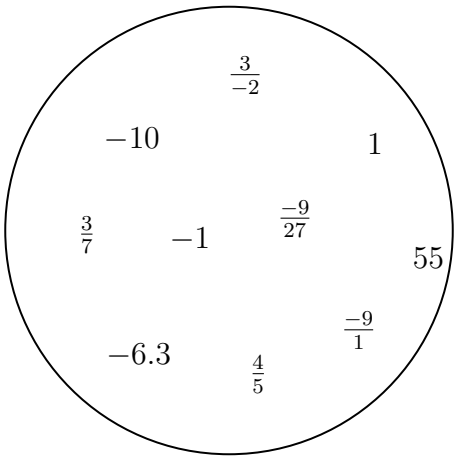
$$\frac{\square}{16} = \frac{\square}{\square}$$

Transposing 16 to other side, the result is _____.

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

Question: 31 .....

Segregate positive and negative rational number.



Answer:

- If both the numerator and the denominator of a rational number are _____ (positive/negative), then it is positive rational number.
- 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 are _____.

Question: 32 .....

$\frac{-3}{-4}$ is a _____ (positive /negative / neither positive nor negative) rational number.

Answer:

-3 is a _____ number, -4 is a _____ number.

Division of $\frac{-3}{-4} = \frac{\square}{\square}$ and this _____ rational number.

(Positive / Negative / Neither positive nor negative rational number)

Question: 33 .....

The product of a positive rational number and a negative rational number is _____ rational number. (Positive/ Negative/ neither positive nor negative)

Answer:

Examples for positive rational numbers: _____
Examples for negative rational numbers: _____
Positive rational number $\times$ Negative rational number = _____ $\times$ _____ = _____ and this is _____ rational number

Comparing Quantities

Topics to be Improved	
Percentage	Basic of percentage

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_____

$$2\% = \frac{\square}{\square}$$

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 $\frac{\square}{\square}$

Then the mark scored by Arun = Total mark $\times$ 75% = _____ $\times$ $\frac{\square}{\square}$ = _____

Question: 36 .....

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

Answer:

There are _____ apples in a basket.
Number of rotten apples are _____ .

Fraction form of rotten apples in a basket = $\frac{\square}{\square}$

Convert it into a percent= _____ x _____% = _____

Algebra

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

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

Question: 37 .....

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

18 $16r$ $54c^4$ $-4mn$ 4 0 z^2 $4x$ 12 x ab

Answer:

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

Terms	Constants	Variables

Question: 38 .....

Mark the expression that contains two terms.

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

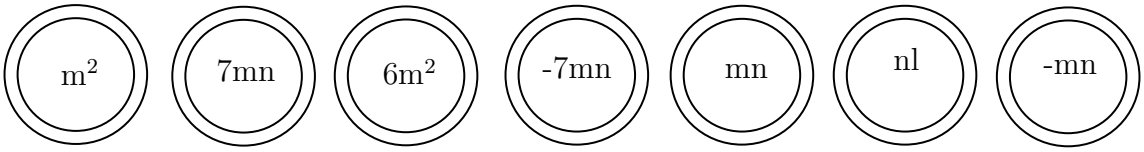
Answer:

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: 39 .....

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.

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

Question: 40 .....

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 = _____ + _____.
The answer is _____

Question: 41 .....

	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 = _____,
Number of boys in school B = _____.
Total number of boys in school A and school B is _____ + _____ = _____.

(ii) Number of boys in school B = _____,
Number of girls in school B = _____.
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: 42 .....

Solve the following:

	$13x + \_\_\_$			$3a - 5b$
(+)	$12x + 10y$		(-)	$5a - 7b$
	$\_\_\_ + 25y$			$-2a - \_\_\_$

Answer:

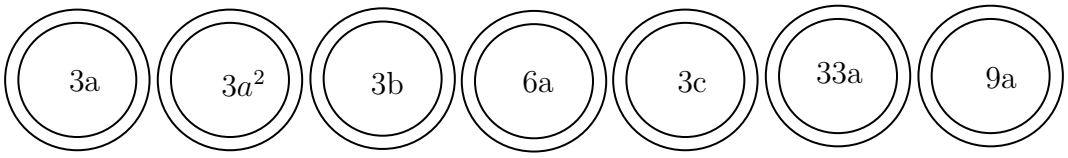
The two terms will get added only if they are _____ (like/unlike) terms.

	$13x + \_\_\_$			$3a - 5b$
(+)	$12x + 10y$		(-)	$5a - 7b$
	$\_\_\_ + 25y$			$-2a - \_\_\_$

Hi, here in this video you will learn **Addition on expression**

Question: 43 .....

Shade the like terms.



Answer:

Given terms are _____.
Two or more term have _____ (same/ different) variables is called like terms.
Here, like terms are _____.

Question: 44 .....

Complete the expression $7r^2 + \text{r}\square - 2\square = \_\_r^2$

Answer:

_____ (Like / Unlike) terms can be added or subtracted.

$$7r^2 + \text{r}\square - 2\square = \left(7 + \_\_ - 2\right) r^2 = \_\_\_\_\_$$

Question: 45 .....

Sam have 3a chocolates and 9y icecream. Ram have 7a chocolates and 5y icecream.

(i) Total chocolates Ram and Sam have : _____.

(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 = _____ + _____ = ___

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

_____ icecream - _____ icecream = _____ - _____ = _____

Hi, here in this video you will learn **Types of expression**

Question: 46 .....

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: 47 .....

Classify the following expression into monomial, binomial and polynomial.

1. $7m + n + 2$
2. $8x^2 + 0$
3. $7xy + 4m$

Answer:

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: 48 .....

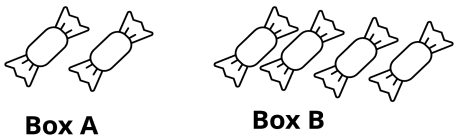
$5m^2 + m + 0$ is a _____ expression. (Monomial/ Binomial/ Trinomial)

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 **Solving an equation using application**

Question: 49 .....



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)

Question: 50 .....

Write the equation for the following statement.
Subtracting four times of m from 4 is n

Answer:

Four times of m = _____

Subtracting four times of m from 4 = _____

The equation is _____

Question: 51 .....

Compare the given two statements ($<, >, =$)

Sum of $2a$ and 9 ☐ Add 9 to the product of a and 2

Answer:

Sum of $2a$ and 9 = _____

Product of a and 2 = _____

Add 9 to the product of a and 2 = _____

Therefore, sum of $2a$ and 9 ☐ Add 9 to the product of a and 2

Hi, here in this video you will learn **Solving an equation**

Question: 52 .....

If ☺= 5, then 5 ☺ +5 = _____

Answer:

The value of the given smiley ☺ is _____.

Substituting the value in the expression = 5(___) + 5 = _____ + _____ = _____.

Question: 53 .....

Which of the following number can be placed in the box to make the equation correct (-2, -1, 0, 1, 2)

$7 \square + 3 = -4$

Answer:

The given equation is 7___ +3 =-4 Substitute the values (-2, -1, 0, 1, 2) in the circle,

7× ___+3= ___

7× ___+3 = ___

7× ___+3 = ___

7× ___+3 = ___

7× ___+3 = ___

Therefore, _____ is the number that can be placed in a box to make the equation correct.

Question: 54 .....

Arrange the terms in the descending order when the value of x is 2.
$2x$ $5x \times 1$ $x + 3$ $2x - 4$ $\frac{1}{2}x$

Answer:

The given expression are _____.
The value of x is _____.
substituting value of x

$2x = 2\times$ _____ = _____

$2x - 4 = 2\times$ _____ - 4 = _____

$x + 3 =$ _____ = _____

$\frac{1}{2}x = \frac{1}{2} \times$ ___ = _____

$5x \times 1 = 5 \times$ _____ $\times 1 =$ _____

Arranging in descending order: ___, ___, ___, ___, ___.
Their respective algebraic terms are ___, ___, ___, ___, ___.