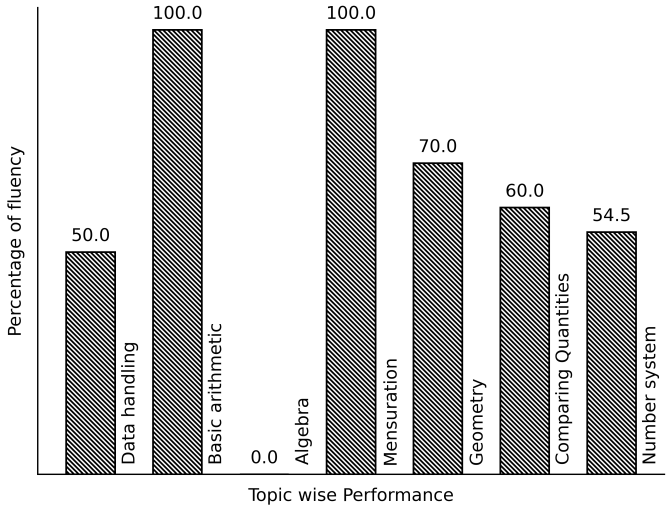
LaPIS Diagnostic Test Workbook - Mathematics

Name	**:**	**Bharanika M**
Class	**:**	**7**
Section	**:**	**B**
School	**:**	**AKV Public School**
Login ID	**:**	**AKV154**

Bharanika M's Performance Report



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

Bharanika M's Study Planner

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

Teacher's Feedback to Student

Class Teacher Signature

Principal Signature

Data handling

Topics to be Improved	
Range	Finding the range
Chance of probability	Sample space in probability

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

Question: 1 .....

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 = _____ , Lowest value = _____ .
Range = _____ − _____ = _____.

Question: 2 .....

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

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

Answer:

Range = _____ - _____.
Arranging the data in ascending order, _____
In the given data,
Highest value = ___ , Lowest value = ___ , Range = _____ − _____ = _____

Question: 3 .....

Find the range of first 10 multiple of 5.

Answer:

First 10 multiple of 5 = _____
Therefore,
Highest value = _____ , Lowest value = _____ , Range = _____ − _____ = _____

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

Question: 4 .....

Which of the following contains list of all possible outcomes.

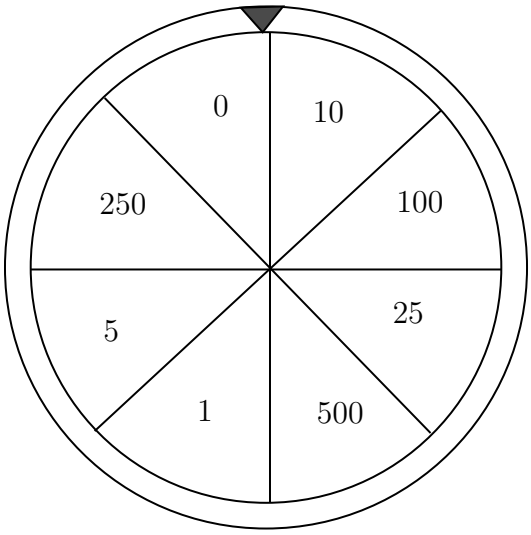
Probability	Sample space	Sure events	Impossible events

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: 5 .....

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: 6 .....

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 + _____ ,
_____ + _____, _____ + _____,

Geometry

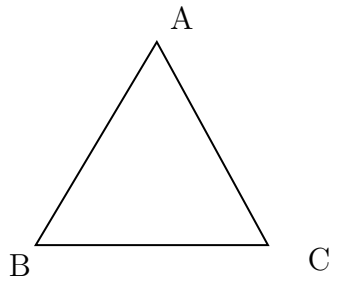
Topics to be Improved	
Angle sum property of triangle	Angle sum property of triangle
Right angle triangle and pythagoras property	Basics of Pythagoras property
Sum of lengths of two sides of a triangle	Sum of two sides of a triangle

Hi, here in this video you will learn **Angle sum property**

Question: 7 .....

Sum of the angles of triangle is _____.

Answer:

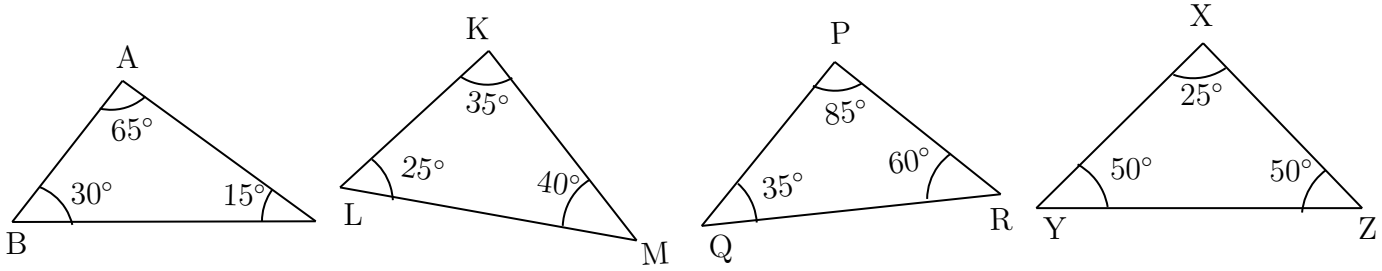


$\angle A + \angle B + \angle C =$ _____

Angle sum formula $= (n-2) \times 180°, n =$ number of sides
Triangle has _____ sides.
Sum of the angles of triangle = (_____ $- 2) \times 180°$ = _____

Question: 8 .....

Which of the following triangle satisfy the angle sum property.



Answer:

Angle sum property of triangle: sum of the angles of a triangle is _____
In $\triangle ABC$, Sum of the angles $= \angle A + \angle B + \angle C =$ _____ = _____
In $\triangle PQR$, Sum of the angles = _____ = _____ = _____
In $\triangle KLM$, Sum of the angles = _____ = _____ = _____
In $\triangle XYZ$, Sum of the angles = _____ = _____ = _____
Therefore, the triangles that satisfy the angle sum property are = _____

Question: 9 .....

Find the angles of triangle, if their angles are in the ratio 8:6:4.

Answer:

Ratio of angles in the triangle is _____
Let's consider the angles of triangle be $8x$, ___ and ___
We know sum of the angles of a triangle is ___
Therefore, $8x$+ ___ + ___ = 180°. The value of x = _____
The angles of the triangle are _____

Hi, here in this video you will learn **Pythagoras property**

Question: 10 .....

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

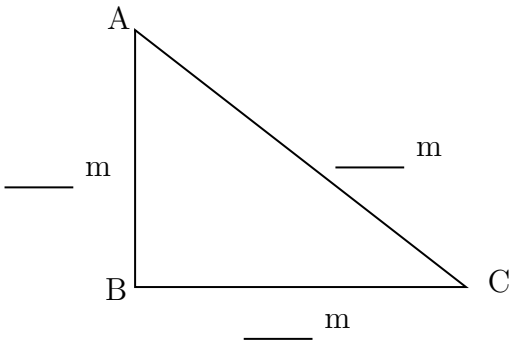
Answer:

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: 11 .....

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

Answer:



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

Given: Base = _____, Altitude = _____,
Base and altitude are _____ (hypotenuse/ legs) of the triangle.

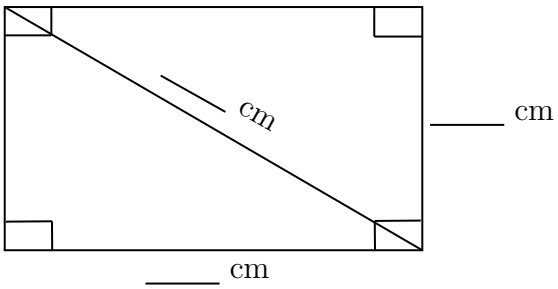
By Pythagoras theorem, (_____)^2 = (_____)^2 + (_____)^2
_____ = _____ + _____

Therefore, hypotenuse of the triangle is _____.

Question: 12 .....

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 = _____

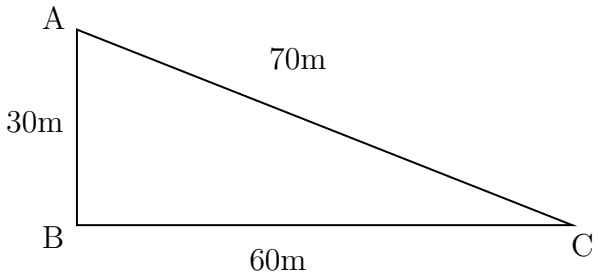
By Pythagoras theorem, (_____)^2 = (_____)^2 + (_____)^2
_____ = _____ + _____

Therefore, diagonal of the rectangle is _____

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

Question: 13 .....

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 are _____ and AB then to _____

Side AC = _____

Side AB + BC = _____ + _____ = _____

Therefore, the greatest distance to reach C from A in the given diagram is _____.

Question: 14 .....

_____ (Sum of / Difference between) the length of any two sides of a triangle is smaller than the length of the third side.

Answer:

There are _____ sides in a triangle.

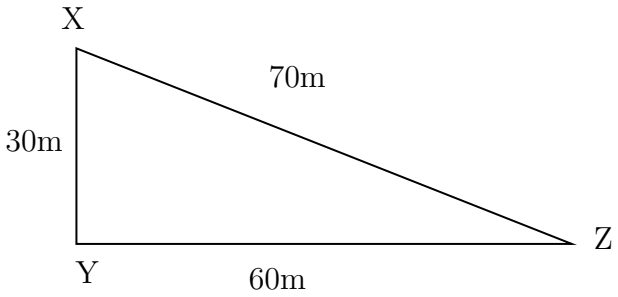
The sum of the two sides of a triangle is _____ than the other side of the triangle.

The difference of the two sides of a triangle is _____ than the other side of the triangle.

Example: In triangle XYZ,

XY + YZ ☐ XZ (<,>, =)

YZ - XY ☐ XZ (<, >, =)



Question: 15 .....

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 _____.

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
Decimals	Multiplication and division of decimals

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

Question: 16 .....

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

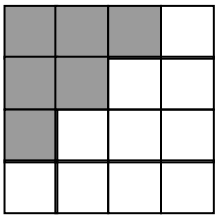
Answer:

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

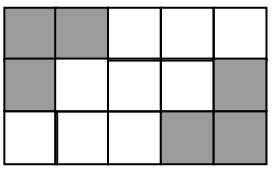
$$\frac{-3}{3} + \frac{1}{3} = \frac{\quad}{3} =$$

Question: 17 .....

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



A



B

Answer:

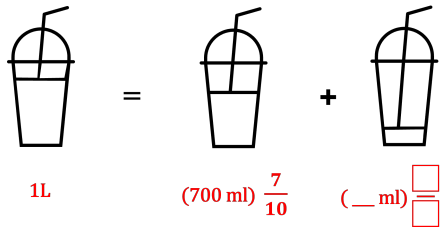
Total number of square in box A = _____.
Number of shaded square in box A = _____
Shaded part of box A in fraction = _____

Total number of square in box B = _____.
Number of shaded square in box B = _____.
Shaded part of box B in fraction = _____.

Shaded part of box A + Shaded part of box B = _____ + _____ = _____

Question: 18 .....

Find the missing values in the given figure.



Answer:

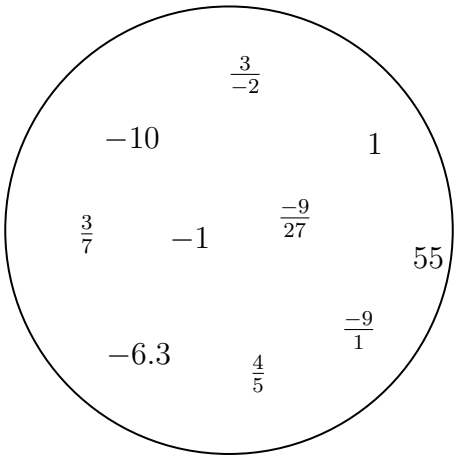
One litre = _____ ml
$\frac{7}{10}$ of one liter = $\frac{7}{10}$ x ___ ml = ___ ml

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: 19 .....

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: 20 .....

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

Answer:

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

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

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

Question: 21 .....

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 × Negative rational number = _____ × _____ = _____ and this is _____ rational number

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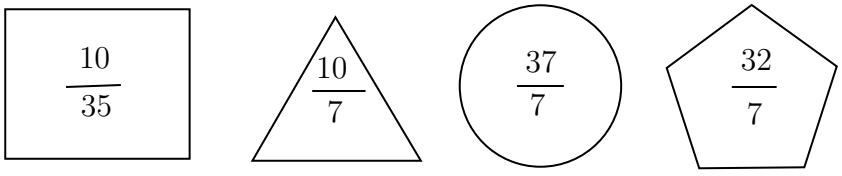
Hi, here in this video you will learn **Division on fractions**

Question: 22 .....

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

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

Question: 23 .....

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: 24 .....

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 **Exponents and power**

Question: 25 .....

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 ___ = $(10)^{\_\_}$

Question: 26 .....

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 = ___.
$(-2)^3$ = ___ × ___ × ___ = ___.

Question: 27 .....

(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 = $(Base)^{\text{——}}$

(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 **Basics of decimals**

Question: 28 .....

Shade 0.4 part of the given shape.

Answer:

There are _____ boxes.
0.4 can be expressed as _____ in fraction
This fraction represents _____ parts out of _____equal parts.
So, we need to shade _____ boxes out of _____boxes.

Question: 29 .....

Solve the following.

(i) 0.4 × 1.2

(ii) 0.48×1.2

Answer:

(i) 0.4×1.2 :
Multiplication of 0.4×1.2 assuming there is no decimal point is _____.
The number of digits after decimal point in 0.4 is _____ and 1.2 is _____.
Total digits after decimal point in the product of two numbers is _____.
Count that digits from the right towards left and place the decimal point, the result is _____.

(ii) 0.48×1.2:
Multiplication of 0.48×1.2 assuming there is no decimal point is _____.
The number of digits after decimal point in 0.48 is _____ and 1.2 is _____.
Total digits after decimal point in the product of two numbers is _____.
Count that digits from the right towards left and place the decimal point, the result is _____.

Question: 30 .....

One box of chocolate costs Rs.20.10. What is the cost of 15 chocolates, if a box contains 10 chocolates?

Answer:

One box contains _____ chocolates. The cost of one box is _____
Then cost of one chocolate = _____ ÷ _____= _____

(i) Total digits after decimal point in decimal number = _____

(ii) Divide the two numbers assuming there is no decimal point.

$$\frac{2010}{15} = \text{\_\_\_\_\_}$$

(iii) Place the decimal point after _____ digits counting from the right in the quotient after division.

Then the cost of one chocolate is _____ .
The cost of 15 chocolates = cost of one chocolate × _____ = _____ x _____ = _____

Comparing Quantities

Topics to be Improved	
Simple interest	Calculation of simple interest
Percentage	Basic of percentage

Hi, here in this video you will learn **Simple Interest**

Question: 31 .....

Match the following.

Column A	
i	Principle(P)
ii	Amount (A)
iii	Rate (R)
iv	Time period (T)

Column B	
a	Interest calculated based on this
b	Total sum you borrow
c	Number of years
d	Total sum with interest

Answer:

Formula for calculating simple interest = _____.
Interest calculated based on _____.
Total sum you borrow is known as _____.
Number of years is _____. Total sum with interest is _____.

Question: 32 .....

Sara deposited Rs.1200 in a bank. After three years, she received Rs.1320. Find the interest she earned.

Answer:

Given:
Amount = _____ , Principle = _____ , Time period = _____.
If Amount and principle is given, then formula for calculating interest is _____.
Interest = _____ - _____ = _____

Question: 33 .....

The simple interest on Rs.5000 for 3 years is Rs.1350. Find the rate of interest.

Answer:

Interest = _____ , Time period = _____ , Principal = _____.

$$\text{Rate of interest} = \frac{\text{\_\_\_\_\_ x } 100}{\text{Principal x \_\_\_\_\_}}$$

Substituting values in the formula,

$$\text{Rate of interest} = \frac{\text{\_\_\_\_\_ x } 100}{\text{Principal x \_\_\_\_\_}}$$

Rate of interest = _____
Therefore, the rate of interest is _____ %

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

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

Question: 37 .....

If ☺= 5, then 5 ☺ +5 = _____

Answer:

The value of the given smiley ☺ is _____.
Substituting the value in the expression = 5(___) + 5 = _____ + _____ = _____.

Question: 38 .....

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: 39 .....

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

Answer:

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

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

$x + 3 =$ _____ = _____ $\qquad \frac{1}{2}x = \frac{1}{2} \times$ ___ = _____

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

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

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 **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. $7m + n + 2$
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: 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 **Terms of an expression**

Question: 46 .....

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: 47 .....

Mark the expression that contains two terms.
$3x + 5$ $12a$ $4xy$ $12a + b + 1$ $7m + 0$

Answer:

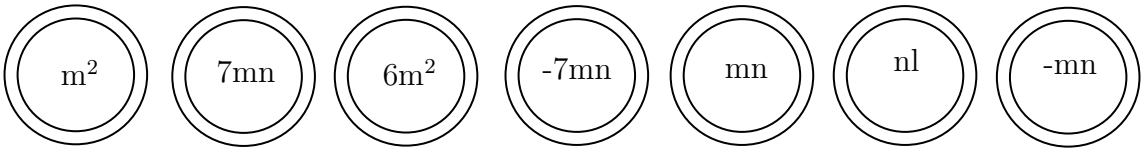
The terms in the expression $3x + 5$ is/are _____.
The terms in the expression $12a$ is/are _____.
The terms in the expression $4xy$ is/are _____.

The terms in the expression $12a + b + 1$ is/are _____.
The terms in the expression $7m + 0$ is/are _____.

Question: 48 .....

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

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

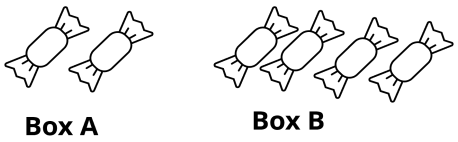


Answer:

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 **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 $\square$ Add 9 to the product of a and 2

Answer:

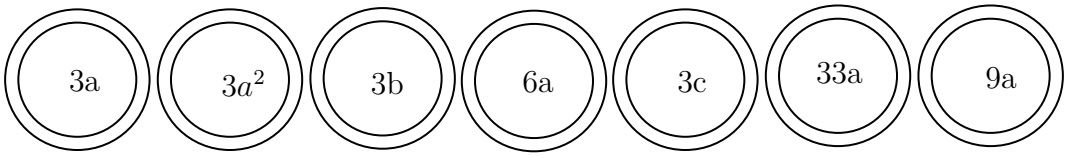
Sum of $2a$ and 9 $=$ _____
Product of a and $2 =$ _____
Add 9 to the product of a and $2 =$ _____

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

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

Question: 52 .....

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: 53 .....

Complete the expression $7r^2 +$ 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: 54 .....

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 = _____ - _____ = _____