

LaPIS Diagnostic Test Workbook - Mathematics

Name : Deepak S T

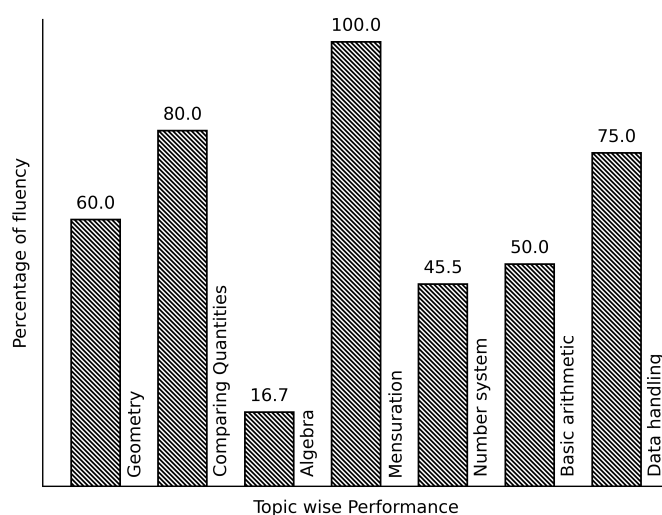
Class : 7

Section : B

School : AKV Public School

Login ID : AKV135

Deepak S T's Performance Report



Score: 22/40

Percentage: 55.0%

Deepak S T'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

LCM

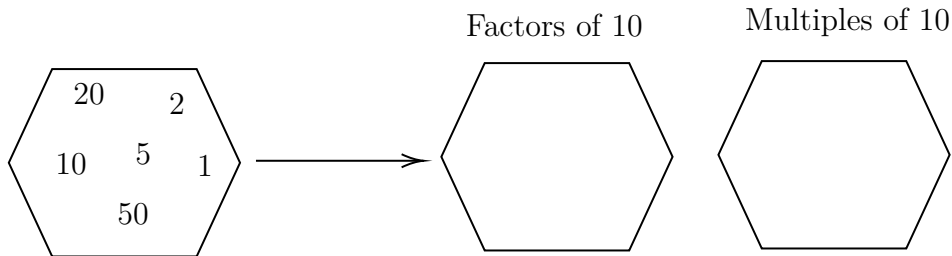
Finding LCM

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



Question: 1

Fill the hexagon with factors and multiples of 10.



Answer:

A _____ (factor/multiple) of a number is an exact divisor of that number.

The factors of 10 are

$10 \times 1 = \underline{\quad}$	$\underline{\quad} \times \underline{\quad} = 10$
$2 \times \underline{\quad} = 10$	$\underline{\quad} \times \underline{\quad} = 10$

Let's find the multiple of 10

$10 \times 1 = \underline{\quad}$	$10 \times 4 = \underline{\quad}$
$10 \times 2 = \underline{\quad}$	$10 \times 5 = \underline{\quad}$
$10 \times 3 = \underline{\quad}$	$10 \times 6 = \underline{\quad}$

Therefore, factors of 10 are _____ and multiples of 10 are _____.

Question: 2

Find the LCM of 50, 100.

Answer:

Complete the division using least common multiple.

50 , 100

The LCM of 50, 100 is $2 \times 2 \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$.

Question: 3

Every number is the multiple of _____

Answer:

Let's find the first ten multiple of random numbers,

Multiple of 1 = _____

Multiple of 2 = _____

Multiple of 13 = _____

Multiple of 20 = _____

Here, _____ is the common factor of every number.

Data handling

Topics to be Improved

Arithmetic mean, mode and median

Mean, Median and Mode

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



Question: 4

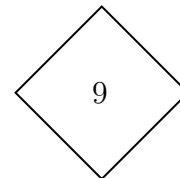
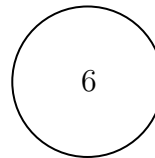
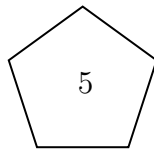
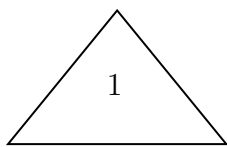
Find the mode of the following data: 5, 15, 23, 5, 32, 44, 72, 55, 6, 3, 5, 65, 45, 67, 24, 19 and 98.

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 = _____ , Median = _____ and Mode = _____.

Answer:

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

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

Therefore, mean = _____

Arrange the data in ascending order : _____

Here, median = _____ , mode = _____.

Geometry

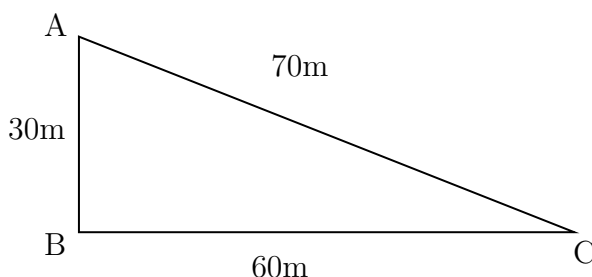
Topics to be Improved	
Sum of lengths of two sides of a triangle	Sum of two sides of a triangle
Right angle triangle and pythagoras property	Basics of Pythagoras property
Related angles	Basic of angles
Faces vertex and edges	Identification of faces, edges and vertices

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



Question: 7

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: 8

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

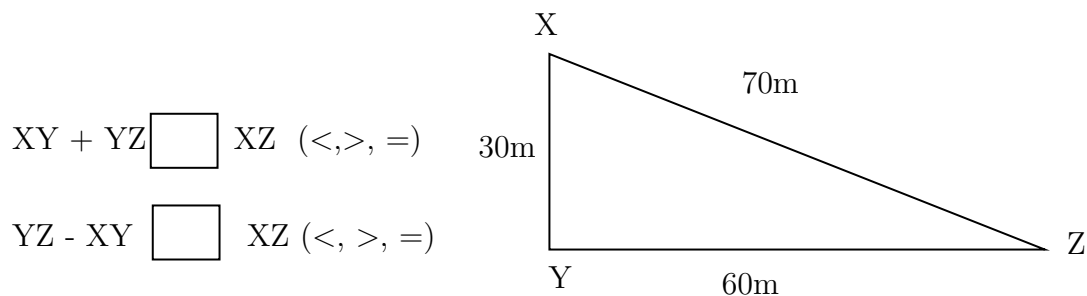
Answer:

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,



Question: 9

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:

- 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 _____
- 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: 10

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

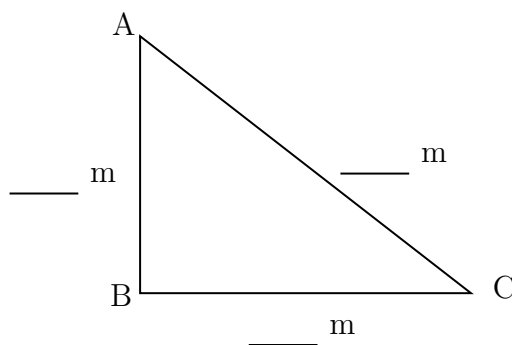
Answer:

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.

$$\text{By Pythagoras theorem, } (\underline{\hspace{2cm}})^2 = (\underline{\hspace{2cm}})^2 + (\underline{\hspace{2cm}})^2$$

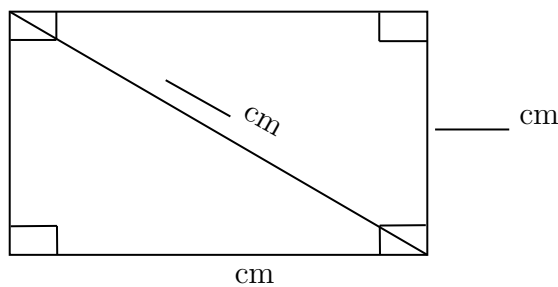
$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

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 = _____

$$\text{By Pythagoras theorem, } (\underline{\hspace{2cm}})^2 = (\underline{\hspace{2cm}})^2 + (\underline{\hspace{2cm}})^2$$

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Therefore, diagonal of the rectangle is _____

Hi, here in this video you will learn **Related Angles**



Question: 13

- (i) When two rays of an angle are perpendicular, then the angle formed between them is a _____ angle .
- (ii) When two rays of an angle are in opposite sides, then the angle formed between them is a _____ angle .

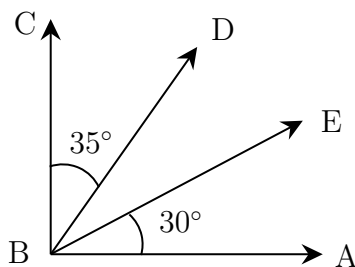
Answer:

A _____ (line segment /ray) begins from one point and travels endlessly in a direction.

- (i) The angle formed between two perpendicular rays is ____° and it is called _____ angle.
- (ii) If two rays starting at same point moves in opposite direction, they form a _____ (straight / perpendicular) line. The measure of the angle formed is ____°and it is called _____ angles.

Question: 14

Find the angle of $\angle DBE$



Answer:

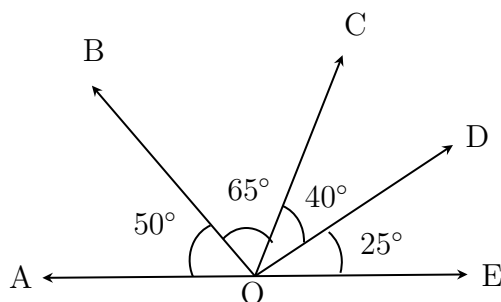
BA and BC are _____ (parallel / perpendicular) rays.
The angle formed between this rays is _____, $\angle ABC =$ _____.

$$\begin{aligned}\angle ABC &= \angle ABE + \text{_____} + \text{_____} \\ &= 30^\circ + \text{_____} + \text{_____} \\ &= \text{_____}\end{aligned}$$

Therefore, $\angle DBE =$ _____

Question: 15

Find the complementary angles in the given diagram.



Answer:

Two angles are said to be complementary if the sum of their angles is equal to _____.

$\angle AOB =$ _____, and its complement angle is _____.

$\angle BOC =$ _____, and its complement angle is _____.

$\angle COD =$ _____, and its complement angle is _____.

$\angle DOE =$ _____, and its complement angle is _____.

Therefore, in the given figure the complementary angles are $\angle AOB$, _____ and $\angle BOC$, _____

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



Question: 16

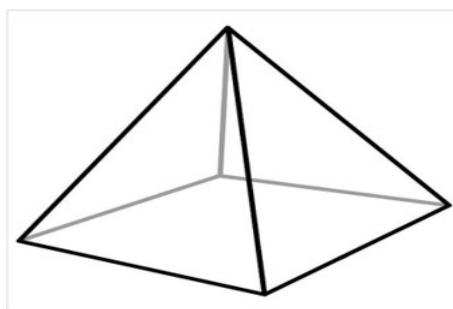
A point at which two or more line segments meet is called _____ (Vertex/ edges/ faces).

Answer:

_____ has two end points (line/line segment/ray).

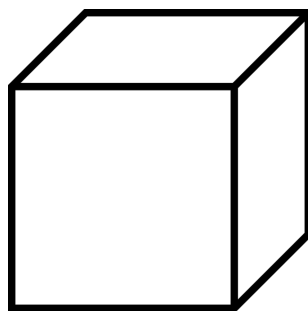
A _____ is a point where two or more line segments meet (Vertex/ edges/ faces).

Mark the vertices in the diagram,



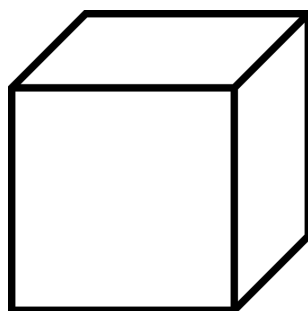
Question: 17

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.

Number system

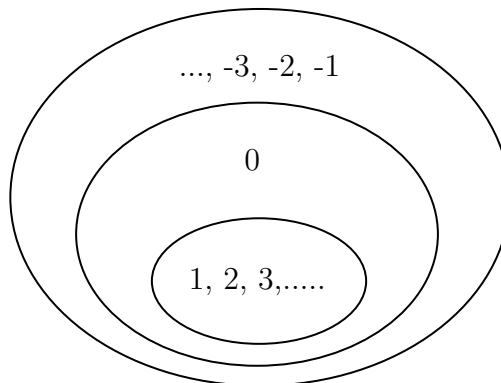
Topics to be Improved	
Integers	Basics of integers
Fractions	Multiplication of fractions
Operations on rational numbers	Subtraction of rational numbers
Exponents	Solving exponents
Introduction to rational numbers	Basics of rational numbers
Positive and negative rational numbers	Identification of positive rational numbers

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



Question: 19

Highlight the ring that contains whole numbers.



Answer:

The numbers inside the inner ring (1, 2, 3,...) are _____ numbers.

The numbers inside the middle ring are _____ numbers.

The numbers inside the outer ring are negative numbers, positive numbers and zero and they are called as _____.

Question: 20

Colour the frame of the box which contains the number 1, 4 and -10

Whole
numbers

Negative
numbers

Integers

Naturals
numbers

Answer:

Whole number consists of 0,1,2,3,4,..... Negative number consists of _____.

Natural numbers consists of _____. Integers consists of _____.

Now, 1, 4, -10 are in _____.

Question: 21

State whether the statement is true or false.

Every positive number is an integer.

Answer:

Positive numbers are _____. Integers consists of _____.

Therefore, positive numbers are _____ (in/not in) integers.

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



Question: 22

Fill the boxes

$$2 + 4 + \frac{6}{2} = \frac{2}{\square} + \frac{4}{\square} + \frac{3}{\square} = \frac{\square}{\square} = 9$$

Answer:

The whole number can be expressed in fraction with denominator equal to _____ (zero/one).

Therefore, 2 can be written as _____ in fraction.

4 can be written as _____ in fraction.

$$2 + 4 + \frac{6}{2} = \frac{2}{1} + \frac{4}{\square} + \frac{3}{\square} = \frac{2}{1} + \frac{4}{\square} + \frac{3}{\square} = \frac{\square}{\square} = 9$$

Question: 23

There are 400 students in a school. Find the number of girls, if three sixteenth of the students are girls.

Answer:

Total number of students = _____

Fraction of students who are girls = _____

Number of girls = $\frac{\boxed{}}{\boxed{}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Question: 24

Solve : $2\frac{7}{4} \times \frac{2}{3}$

Answer:

$2\frac{7}{4}$ is a _____ (proper / mixed) fraction.

Here, 2 is _____, 7 is _____ and 4 is _____.

To convert mixed fraction into improper fraction, $\frac{(\text{Whole} \times \underline{\hspace{2cm}}) + \text{Numerator}}{\text{Denominator}}$

Improper fraction of $2\frac{7}{4} = \underline{\hspace{2cm}}$

$$2\frac{7}{4} \times \frac{2}{3} = \frac{\boxed{}}{\boxed{}} \times \frac{2}{3} = \frac{\boxed{}}{\boxed{}}$$

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



Question: 25

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

Answer:

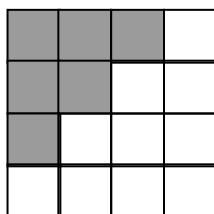
Fractions with same denominators are called _____ (like/ unlike) fractions.

Fraction can be added only if they are _____ (like/ unlike) fractions.

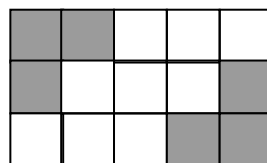
$$\frac{-3}{3} + \frac{1}{3} = \frac{}{3} =$$

Question: 26

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 = _____.

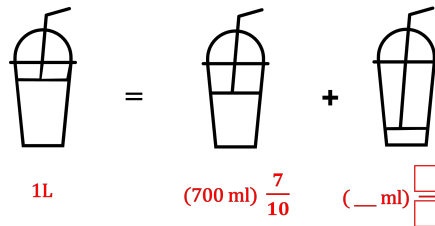
Number of shaded square in box B = _____.

Shaded part of box B in fraction = _____.

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

Question: 27

Find the missing values in the given figure.



Answer:

One litre = _____ ml

$\frac{7}{10}$ of one liter = $\frac{7}{10} \times$ _____ 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 **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 = $10 \times$ _____ \times _____

10 is raised to the power of _____ = (10) —

Question: 29

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: 30

- (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)——

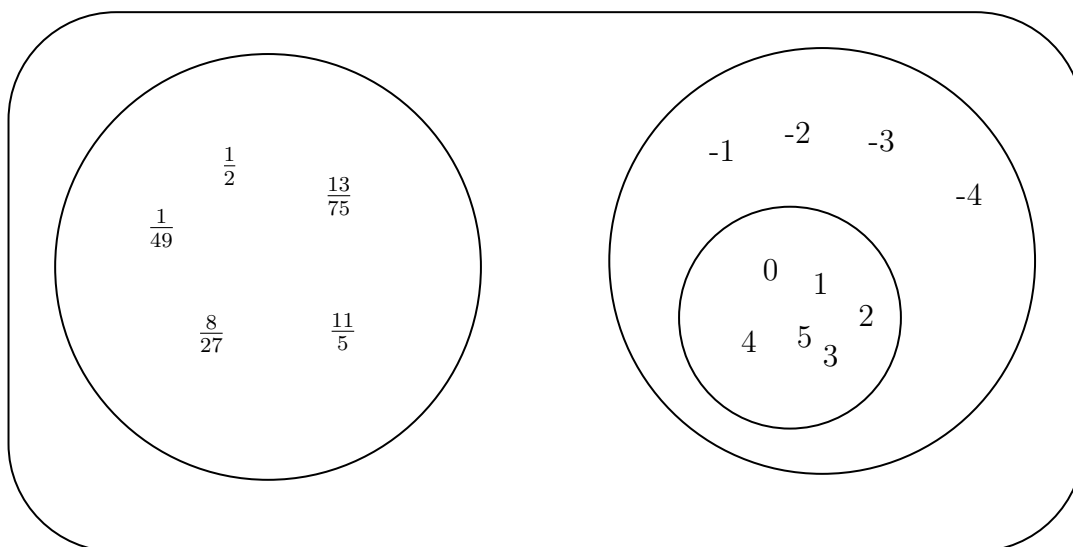
- (i) Tenth power of 100 : Base = ____, Power/Exponents = ____, exponential form = ____.
(ii) k is raised to the power of 5 : Base = ____, Power/Exponent = ____,
exponential form = ____.

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



Question: 31

The numbers in the diagram represents_____.



Answer:

0, 4, 5, 2, 3, 1 are _____ numbers.

-1, -2, -3, -4 are _____ numbers.

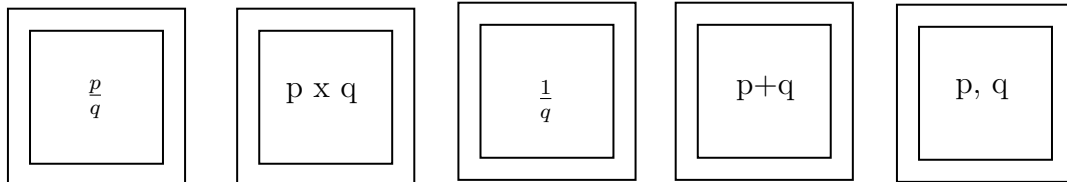
The combination of these circles are called _____.

$\frac{1}{49}$, $\frac{1}{2}$, $\frac{8}{27}$, $\frac{11}{5}$, $\frac{13}{75}$ are _____.

Combination of all three circles are called as _____ numbers.

Question: 32

Shade the correct form of rational numbers.



Answer:

Rational number can be expressed as _____, where both numerator and denominator are _____ (integer/ not a integer), denominator is equal to _____ (zero/ one/ any integer other than zero).

Question: 33

Circle the number which is not a rational number.

$\frac{-5}{-8}$ $\frac{-3}{2}$ $\frac{12}{-6}$ $\frac{0}{-9}$ 256 $\frac{4}{0}$

Answer:

Rational number can be expressed as _____, where both numerator and denominator are _____ (integer/ not a integer), denominator is equal to _____ (zero/ one/ any integer other than zero).

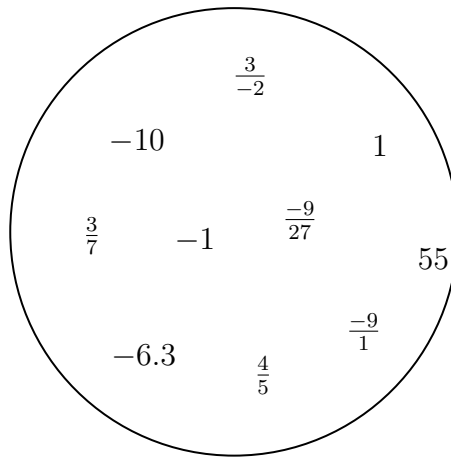
Here, _____ is/are rational number and _____ is/are not a rational number.

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



Question: 34

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: 35

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

Answer:

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

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

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

Question: 36

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	
Simple interest	Calculation of simple interest

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



Question: 37

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: 38

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: 39

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

Answer:

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

Rate of interest = $\frac{\text{_____} \times 100}{\text{Principal} \times \text{_____}}$

Substituting values in the formula,

$$\text{Rate of interest} = \frac{\text{_____} \times 100}{\text{Principal} \times \text{_____}}$$

$$\text{Rate of interest} = \text{_____}$$

Therefore, the rate of interest is _____ %

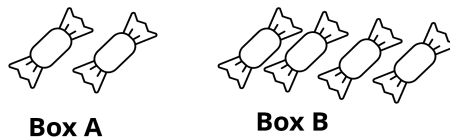
Algebra

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

Hi, here in this video you will learn **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 = _____ \times (No. of chocolates in Box A)

Question: 41

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: 42

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 **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 _____.

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 **Solving an equation**



Question: 49

If $\odot = 5$, then $5 \odot + 5 =$ _____

Answer:

The value of the given smiley \odot is _____.

Substituting the value in the expression $= 5(\text{---}) + 5 =$ _____ + _____ = _____.

Question: 50

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 $7\text{---} + 3 = -4$ Substitute the values (-2, -1, 0, 1, 2) in the circle,

$$7 \times \text{---} + 3 = \text{---}$$

$$7 \times \text{---} + 3 = \text{---}$$

$$7 \times \text{---} + 3 = \text{---}$$

$$7 \times \text{---} + 3 = \text{---}$$

$$7 \times \text{---} + 3 = \text{---}$$

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

Question: 51

Arrange the terms in the descending order when the value of x is 2.

$$2x \quad 5x \times 1 \quad x + 3 \quad 2x - 4 \quad \frac{1}{2}x$$

Answer:

The given expression are _____.

The value of x is _____.

substituting value of x

$$2x = 2 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$2x - 4 = 2 \times \underline{\hspace{2cm}} - 4 = \underline{\hspace{2cm}}$$

$$x + 3 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\frac{1}{2}x = \frac{1}{2} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$5x \times 1 = 5 \times \underline{\hspace{2cm}} \times 1 = \underline{\hspace{2cm}}$$

Arranging in descending order: $\underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$.

Their respective algebraic terms are $\underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$.

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



Question: 52

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

Answer:

The given two expressions are $\underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$.

The two terms will get added only if they are $\underline{\hspace{2cm}}$ (Like/ Unlike) terms.

The sum of two expressions = $\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$.

The answer is $\underline{\hspace{2cm}}$

Question: 53

	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 $\underline{\hspace{2cm}}$

(ii) Total number of students in school B is $\underline{\hspace{2cm}}$

(iii) How many more teachers are there in school B than school A ? $\underline{\hspace{2cm}}$

Answer:

(i) Number of boys in school A = $\underline{\hspace{2cm}}$,

Number of boys in school B = $\underline{\hspace{2cm}}$.

Total number of boys in school A and school B is $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$.

(ii) Number of boys in school B = $\underline{\hspace{2cm}}$,

Number of girls in school B = $\underline{\hspace{2cm}}$.

Total number of students in school B is $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$.

Question: 54

$$\begin{array}{r} 13x + \text{---} \\ (+) 12x + 10y \\ \hline \text{---} + 25y \end{array}$$

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

$$\begin{array}{r} 13x + ______ \\ (+) 12x + 10y \\ \hline ______ + 25y \end{array}$$

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