

LaPIS Diagnostic Test Workbook - Mathematics

Name : Thangaivelan S

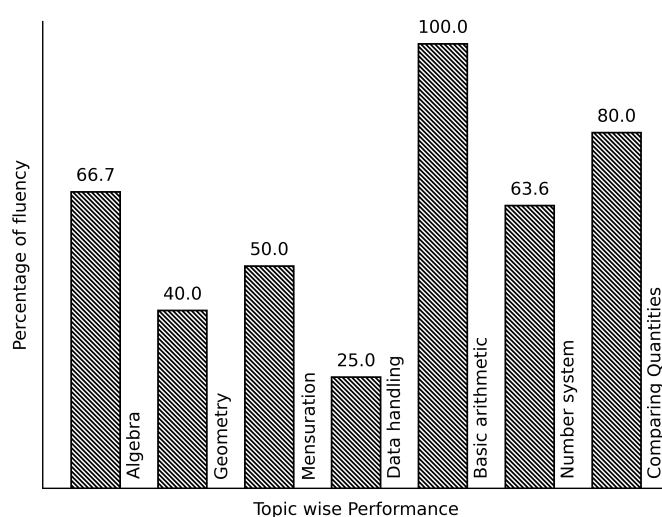
Class : 7

Section : C

School : AKV Public School

Login ID : AKV182

Thangaivelan S's Performance Report



Score: 23/40

Percentage: 57.5%

Thangaivelan 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

Mensuration

Topics to be Improved

Area

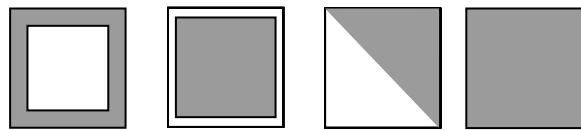
Area of rectangle

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



Question: 1

Find which of the shaded portion in the given shape represent it's area.



Answer:

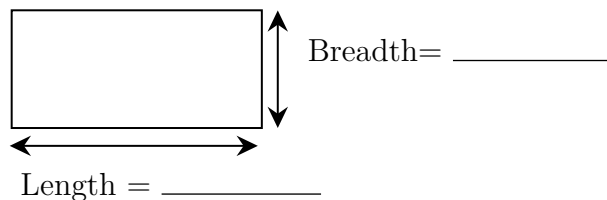
Given figure is _____ in shape.

Area is the _____ (inside/ outside/ boundary) of a shape.

Question: 2

Find the area of a rectangular garden whose dimension is 25 ft in length and 20 ft in breadth.

Answer:



The garden is in _____ shape.

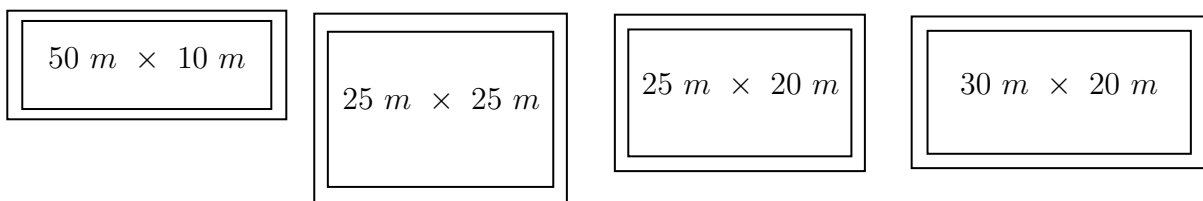
Length of garden is _____ and breadth of garden is _____.

Formula for area of the shape = _____.

The area of garden = _____ x _____ = _____ cm^2

Question: 3

Shade the possible dimension of the door whose area is $500 m^2$



Answer:

Door is _____ in shape. Area of the _____ shaped door is _____.

Dimensions	Length	Breadth	Area
50m × 10m			
25m × 25m			
25m × 20m			
30m × 20m			

Therefore, possible dimension of the door whose area is 500 m^2 is/are _____

Data handling

Topics to be Improved	
Range	Finding the range
Arithmetic mean, mode and median	Mean, Median and Mode
Chance of probability	Basis of probability

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



Question: 4

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: 5

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

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

Answer:

Range = _____ - _____.

Arranging the data in ascending order, _____

In the given data,

Highest value = ____ , Lowest value = ____ , Range = _____ - _____ = _____

Question: 6

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 **Mean, Median, Mode**



Question: 7

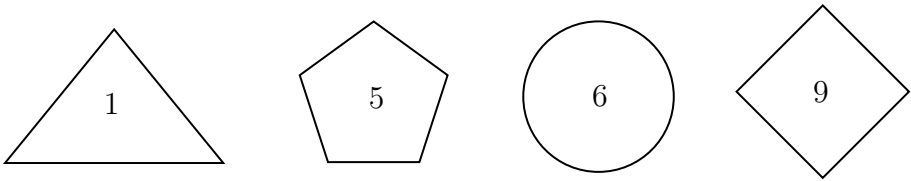
Find the mode of the following data: 5, 15, 23, 5, 32, 44, 72, 55, 6, 3, 5, 65, 45, 67, 24, 19 and 98.

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: 8

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: 9

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 = _____.

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



Question: 10

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: 11

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: 12

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)

Geometry

Topics to be Improved	
Types of triangle	Basics of types of triangle (sides)
Faces vertex and edges	Identification of faces, edges and vertices
Related angles	Basic of angles
Sum of lengths of two sides of a triangle	Sum of two sides of a triangle
Criteria for congruence of triangle	Identification of criteria of congruence of triangles
Right angle triangle and pythagoras property	Basics of Pythagoras property

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



Question: 13

Polygon with three sides is called as _____.

Answer:

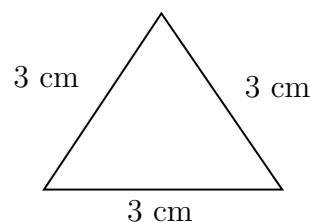
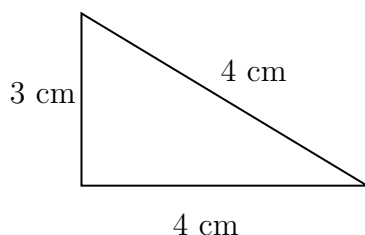
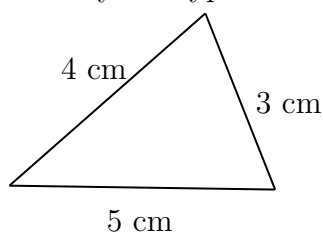
A polygon is a simple _____ (open / closed) curve made up of only line segments.

Polygon with three sides is called _____.

Draw a diagram of polygon with three sides :

Question: 14

Identify the types of triangles.



Answer:

Triangle has _____ sides.

- Triangle with all sides are equal is called _____ triangle.
- Triangle with two sides of equal length is called _____ triangle.
- Triangle with three sides of different length is called _____ triangle.

Question: 15

A park is in the shape of an isosceles triangle. If side length of the park is 30ft and 60ft. then the possible length of third side of park can be _____.

Answer:

The shape of the park is _____ .

The shapes has _____ sides and this shape has _____ sides of equal length.

Given: length of sides of park is _____.

The possible length of third side is _____.

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



Question: 16

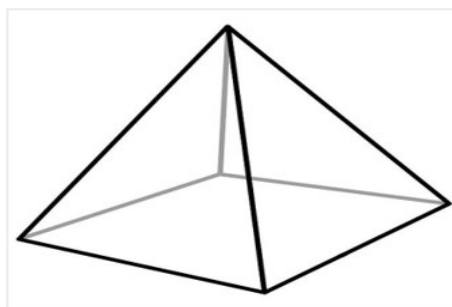
A point at which two or more lines segments meet is called _____(Vertex/ edges/ faces).

Answer:

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

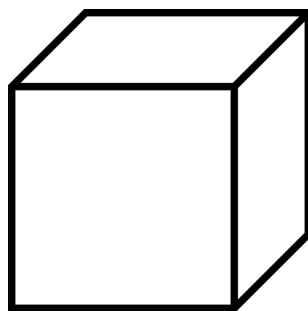
A _____is a point where two or more line segments meet(Vertex/ edges/ faces).

Mark the vertices in the diagram,



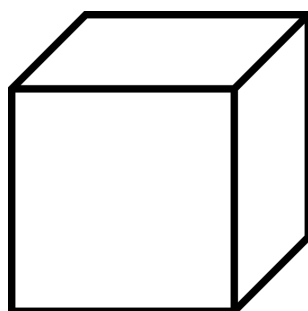
Question: 17

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 **Related Angles**



Question: 19

- (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 .

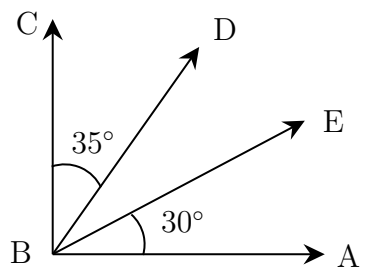
Answer:

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: 20

Find the angle of $\angle DBE$



Answer:

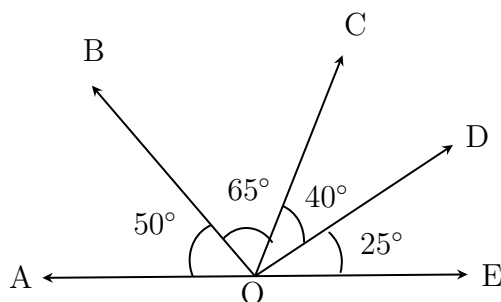
BA and BC are _____ (parallel / perpendicular) rays.
The angle formed between this rays is _____, $\angle ABC =$ _____.

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

Therefore, $\angle DBE =$ _____

Question: 21

Find the complementary angles in the given diagram.



Answer:

Two angles are said to be complementary if 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 _____.

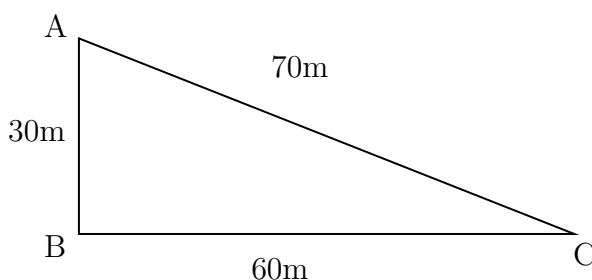
Therefore, in the given figure the complementary angles are $\angle AOB$, _____ and $\angle BOC$, _____

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



Question: 22

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: 23

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

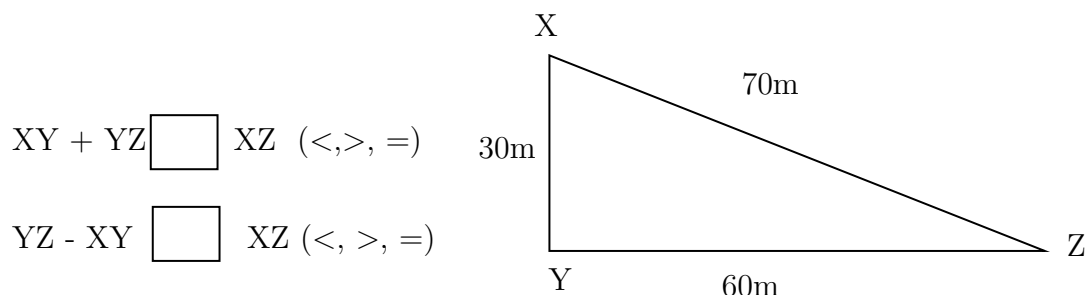
Answer:

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: 24

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 _____

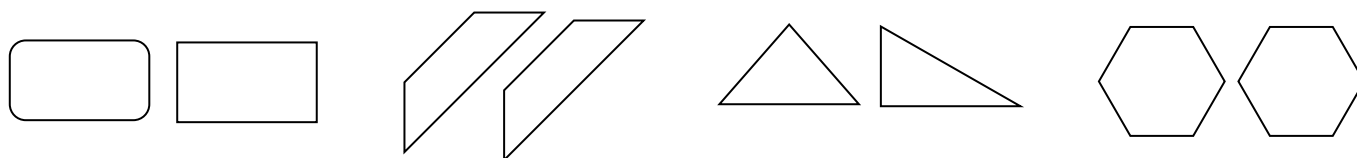
Therefore, length of the third side is greater than _____ but less than _____.

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



Question: 25

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: 26

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:

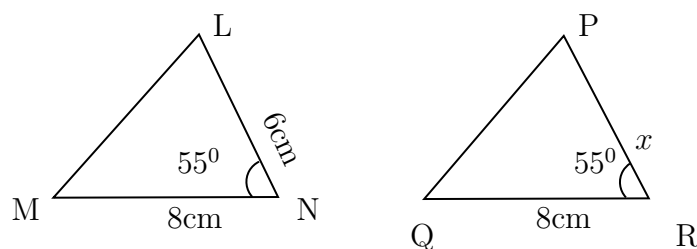
Two triangle are _____ (congruent/not congruent) if they are identical in shapes and size. Criteria for congruence of triangles are SSS, _____ and _____.

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: 27

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, $MN = \underline{\hspace{2cm}}$, _____ and $\angle N = \underline{\hspace{2cm}}$

The side $MN = 8 \text{ cm}$ in $\triangle LNM$ 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 _____ $\triangle LNM$.

Therefore, length of side $PR = \underline{\hspace{2cm}}$

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



Question: 28

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

Answer:

Pythagoras theorem is only applicable for _____ triangle.

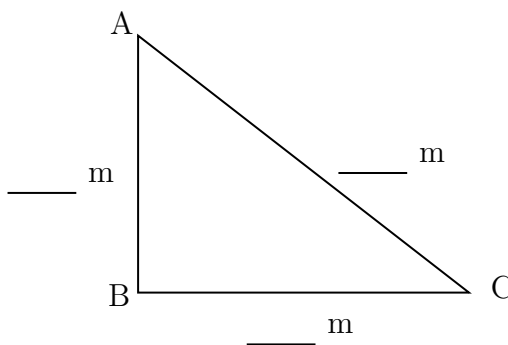
Longest side of the triangle is _____ (hypotenuse/ legs) and other two sides are called _____ (hypotenuse/ legs).

Pythagoras theorem states that _____.

Question: 29

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.

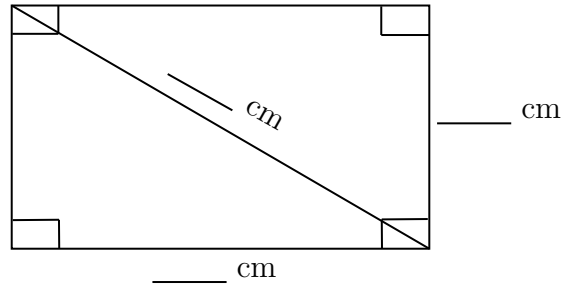
$$\text{By Pythagoras theorem, } (\text{_____})^2 = (\text{_____})^2 + (\text{_____})^2$$
$$\text{_____} = \text{_____} + \text{_____}$$

Therefore, hypotenuse of the triangle is _____.

Question: 30

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, $(\text{_____})^2 = (\text{_____})^2 + (\text{_____})^2$
 $\text{_____} = \text{_____} + \text{_____}$

Therefore, diagonal of the rectangle is _____

Number system

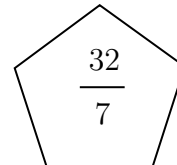
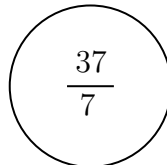
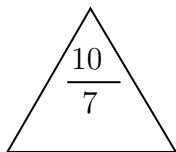
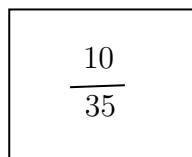
Topics to be Improved	
Fractions	Division of fraction
Positive and negative rational numbers	Identification of positive rational numbers
Operations on rational numbers	Division of rational numbers
Exponents	Solving exponents

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



Question: 31

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

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

Question: 32

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 = _____.

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

Question: 33

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

Answer:

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

$$\frac{12}{40} \div \text{_____} = \frac{12}{40} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

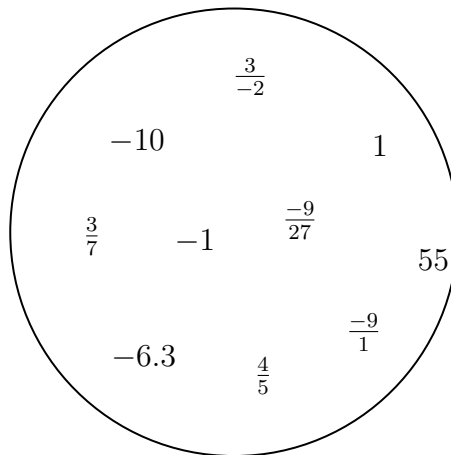
Then the answer is _____

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 $-\frac{3}{-4} = \frac{\square}{\square}$ 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

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



Question: 37

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: 38

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: 39

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,

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

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

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

Transposing 16 to other side, the result is _____.

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



Question: 40

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 $= 10 \times \text{_____} \times \text{_____}$

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

Question: 41

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: 42

(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 = _____.

Comparing Quantities

Topics to be Improved	
Percentage	Basic of percentage

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



Question: 43

2% can be written as

Answer:

Percentages are numerators of fractions with denominator _____

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

Question: 44

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 $\frac{\boxed{}}{\boxed{}}$

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

Question: 45

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 _____% = _____

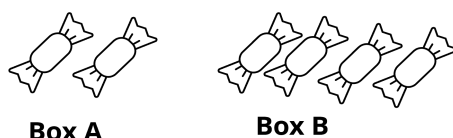
Algebra

Topics to be Improved	
Basics of simple equation	Formating of simple equation, Solving of simple equation

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



Question: 46



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: 47

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: 48

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: 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

$$2x = 2 \times \text{---} = \text{---}$$

$$2x - 4 = 2 \times \text{---} - 4 = \text{---}$$

$$x + 3 = \text{---} = \text{---}$$

$$\frac{1}{2}x = \frac{1}{2} \times \text{---} = \text{---}$$

$$5x \times 1 = 5 \times \text{---} \times 1 = \text{---}$$

Arranging in descending order: _____, _____, _____, _____, _____.

Their respective algebraic terms are _____, _____, _____, _____, _____.