

LaPIS Diagnostic Test Workbook - Mathematics

Name : Jaisree V

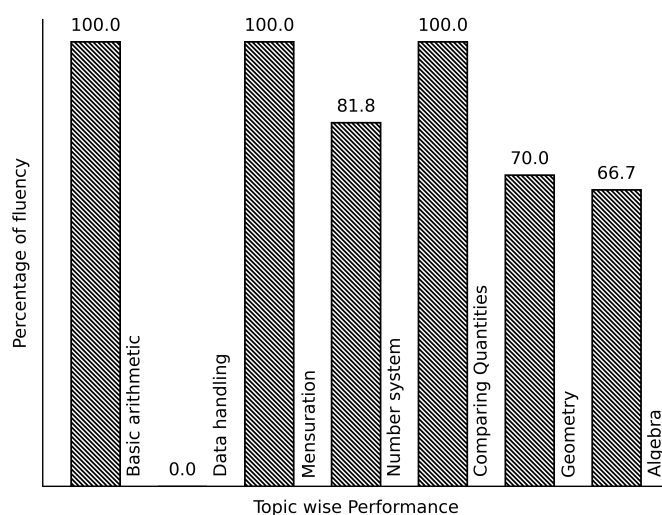
Class : 7

Section : B

School : AKV Public School

Login ID : AKV157

Jaisree V's Performance Report



Score: 29/40

Percentage: 72.5%

Jaisree V'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

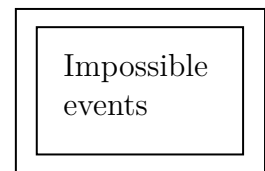
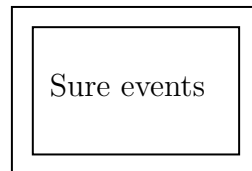
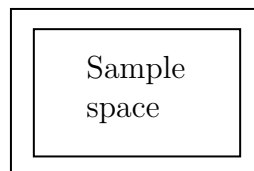
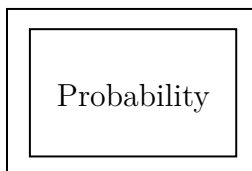
Topics to be Improved	
Chance of probability	Sample space in probability, Basis of probability
Arithmetic mean, mode and median	Mean, Median and Mode
Range	Finding the range

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



Question: 1

Which of the following contains list of all possible outcomes.



Answer:

Probability is the measure of _____ (chance /number) of an events happenings.

Sample space consists of _____ (possible/ impossible) outcomes.

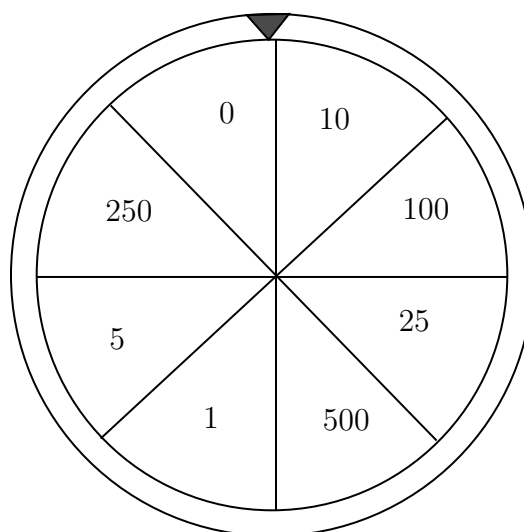
Sure events always _____ (occurs/don't occurs).

Impossible events _____ (occurs/ don't occurs).

Therefore, _____ contains list of possible outcomes.

Question: 2

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: 3

A bag contains three balls 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 **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 **Mean, Median, Mode**



Question: 7

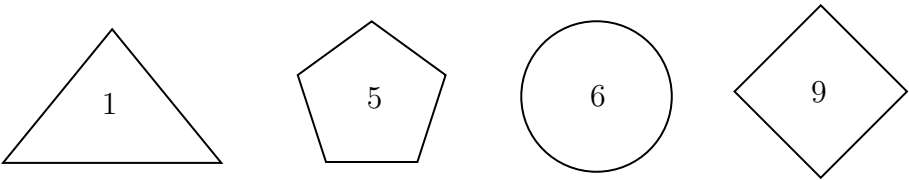
Find the mode of the following data: 5, 15, 23, 5, 32, 44, 72, 55, 6, 3, 5, 65, 45, 67, 24, 19 and 98.

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 **Range**



Question: 10

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: 11

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: 12

Find the range of first 10 multiple of 5.

Answer:

First 10 multiple of 5 = _____

Therefore,

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

Geometry

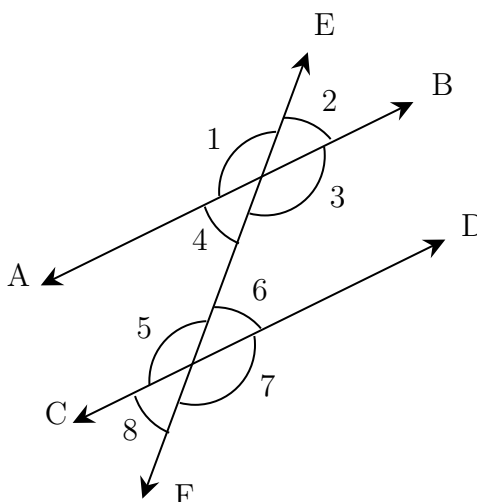
Topics to be Improved	
Transversal angle made by transversal	Basics of Transversal angle
Related angles	Complementary angles
Right angle triangle and pythagoras property	Basics of Pythagoras property

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:

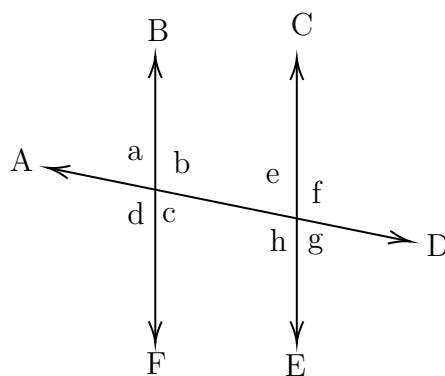
A line that intersects two or more lines at distinct points is called a _____ (transversal/Intersecting line).

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:

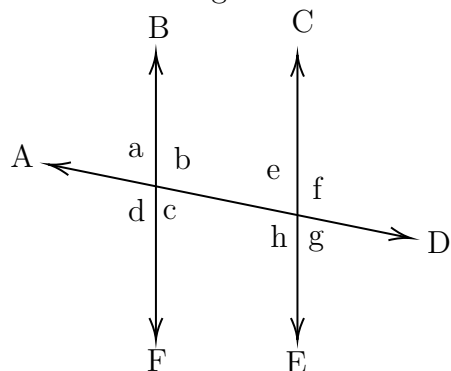
A line that intersects two or more lines at distinct points is called a _____ (transversal/Intersecting line).

In a given diagram, _____ is a transversal line. (BF/AD/CE)

Alternate angles	Corresponding angles
$\angle a$ and $\angle g$, $\angle b$ and $\angle h$,	$\angle a$ and $\angle e$, $\angle b$ and $\angle f$,

Question: 15

Find $\angle e$ and $\angle g$ if $\angle a = 30^\circ$.



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 $\angle a$ is _____ and its value is _____.

Corresponding angle of $\angle a$ is _____ and its value is _____.

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



Question: 16

1. Two angles are complementary if their sum is equal to _____.
2. Two angles are supplementary if their sum is equal to _____.

Answer:

1. When sum of the two angles is equal to 90° , they are called as _____ angle.
Example : 45° and 45° , _____, and _____.
2. When sum of the two angles is equal to 180° , they are called as _____ angle.
Example : 90° and 90° , _____, and _____.

Question: 17

Shade the complementary angles.

$85^\circ, 95^\circ$	$45^\circ, 45^\circ$	$6^\circ, 84^\circ$	$73^\circ, 107^\circ$	$36^\circ, 64^\circ$	$90^\circ, 90^\circ$
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Answer:

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

- $85^\circ + 95^\circ =$ _____ and this is _____ (a / not a) complementary angles.
- $45^\circ + 45^\circ =$ _____ and this is _____ angles.
- $6^\circ + 84^\circ =$ _____ and this is _____ angles.
- $73^\circ + 107^\circ =$ _____ and this is _____ angles.
- $36^\circ + 64^\circ =$ _____ and this is _____ angles.
- $90^\circ + 90^\circ =$ _____ and this is _____ angles.

Question: 18

Find the complement and supplement of 15° and 90°

Answer:

One angle is _____ (complements / supplements) to other angle, when sum of the two angles is equal to 90° .

One angle is _____ (complements / supplements) to other angle, when sum of the two angles is equal to 180° .

Complement of $15^\circ =$ _____,

Complement of $90^\circ =$ _____.

Supplement of $15^\circ =$ _____,

Supplement of $90^\circ =$ _____

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



Question: 19

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

Answer:

Pythagoras theorem is only applicable for _____ triangle.

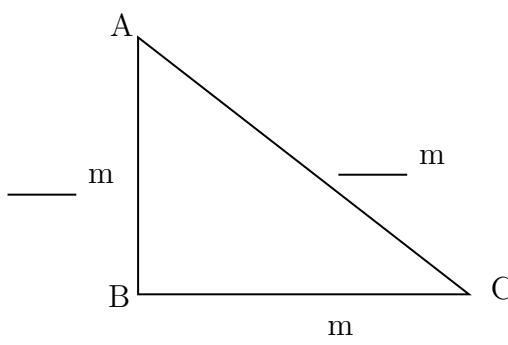
Longest side of the triangle is _____ (hypotenuse/ legs) and other two sides are called _____ (hypotenuse/ legs).

Pythagoras theorem states that _____.

Question: 20

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.

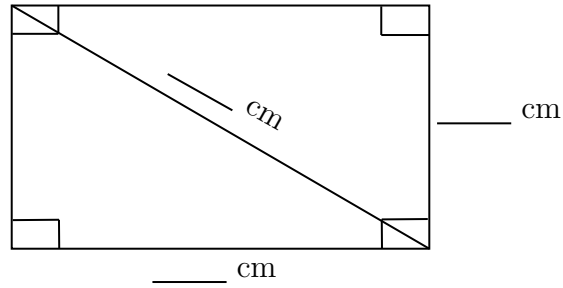
By Pythagoras theorem, $(\text{_____})^2 = (\text{_____})^2 + (\text{_____})^2$
_____ = _____ + _____

Therefore, hypotenuse of the triangle is _____.

Question: 21

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	
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 **Operation on rational numbers**



Question: 22

Fill in the boxes to make the given expression correct.

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

Answer:

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

Here, dividend = _____ and divisor = _____

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

Question: 23

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 = _____.

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

Question: 24

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 $\frac{8}{3}$ to RHS,

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

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

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

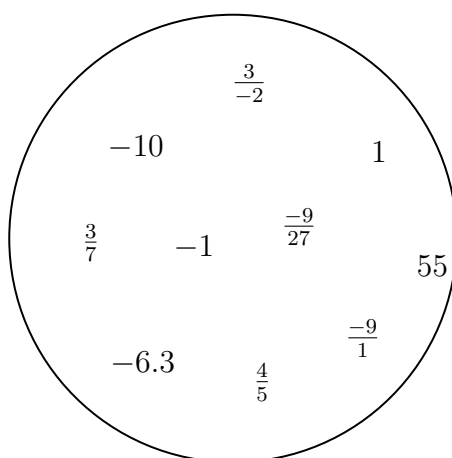
Transposing 16 to other side, the result is _____.

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



Question: 25

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: 26

$\frac{-3}{-4}$ 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: 27

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

Algebra

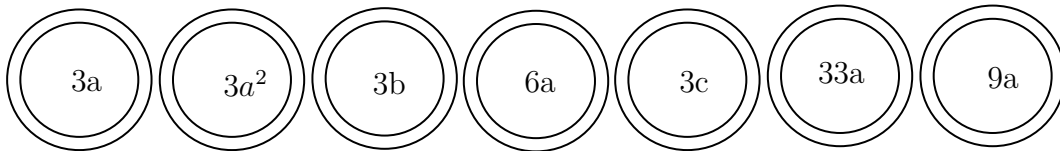
Topics to be Improved	
Addition and subtraction of algebraic expressions	Like terms and Unlike terms
subtraction of algebraic expressions	subtraction of algebraic expressions

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



Question: 28

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: 29

Complete the expression $7r^2 + r \square - 2\square = \underline{\hspace{2cm}} r^2$

Answer:

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

$$7r^2 + 1 \square - 2 \square = (7 + \underline{\hspace{1cm}} - 2)r^2 = \underline{\hspace{1cm}}$$

Question: 30

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 **Subtraction on expression**



Question: 31

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: 32

	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:

- Question: 33

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

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

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

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