

# LaPIS Diagnostic Test Workbook - Mathematics

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Name : Dharmesh S

Class : 7

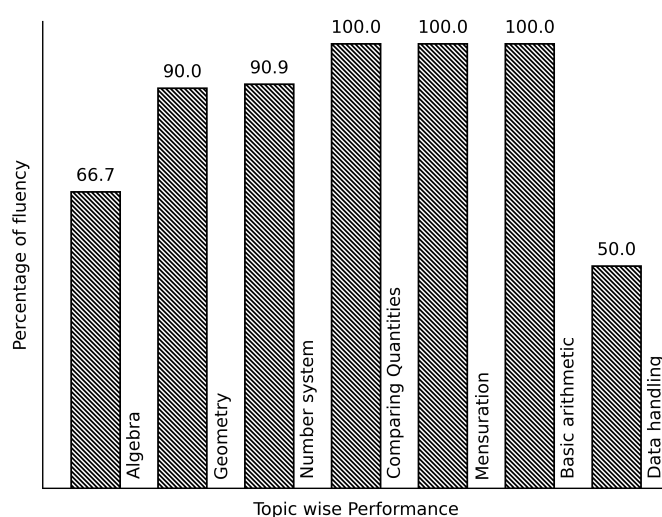
Section : A

School : AKV Public School

Login ID : AKV103

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## Dharmesh S's Performance Report



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Score: 34/40

Percentage: 85.0%

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## Dharmesh S's Study Planner

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

Teacher's Feedback to Student

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Class Teacher Signature

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Principal Signature

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## Data handling

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

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

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**Question: 1** .....

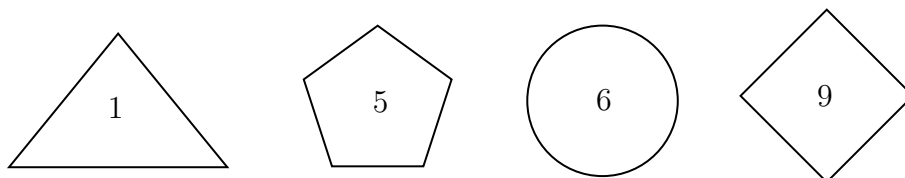
Find the mode of the following data: 5, 15, 23, 5, 32, 44, 72, 55, 6, 3, 5, 65, 45, 67, 24, 19 and 98.

**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: 2** .....

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: 3** .....

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 sum of all observation = \_\_\_\_\_, number of observation = \_\_\_\_\_

Therefore, mean = \_\_\_\_\_

Arrange the data in ascending order : \_\_\_\_\_

Here, median = \_\_\_\_\_, mode = \_\_\_\_\_.

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

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**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)

# Geometry

Topics to be Improved	
Right angle triangle and pythagoras property	Basics of Pythagoras property

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



**Question: 7** .....

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

**Answer:**

Pythagoras theorem is only applicable for \_\_\_\_\_ triangle.

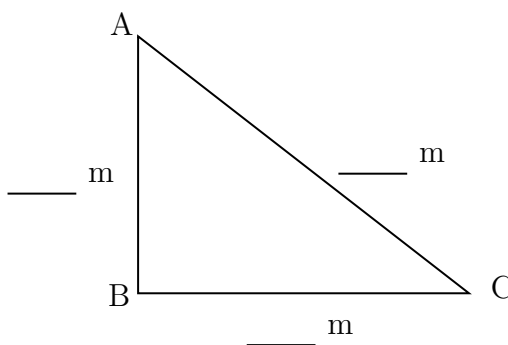
Longest side of the triangle is \_\_\_\_\_ (hypotenuse/ legs) and other two sides are called \_\_\_\_\_(hypotenuse/ legs).

Pythagoras theorem states that \_\_\_\_\_.

**Question: 8** .....

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.

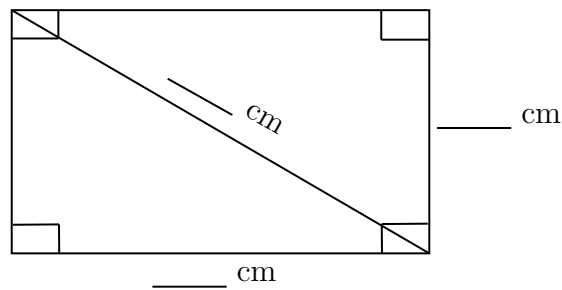
By Pythagoras theorem,  $(\text{_____})^2 = (\text{_____})^2 + (\text{_____})^2$   
 $\text{_____} = \text{_____} + \text{_____}$

Therefore, hypotenuse of the triangle is \_\_\_\_\_.

**Question: 9** .....

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	Subtraction of rational numbers

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



**Question: 10** .....

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

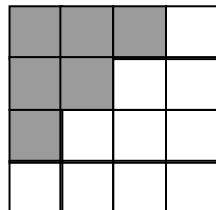
**Answer:**

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

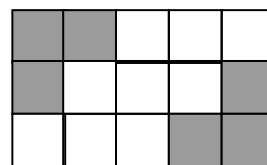
$$\frac{-3}{3} + \frac{1}{3} = \frac{\quad}{3} =$$

**Question: 11** .....

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



A



B

**Answer:**

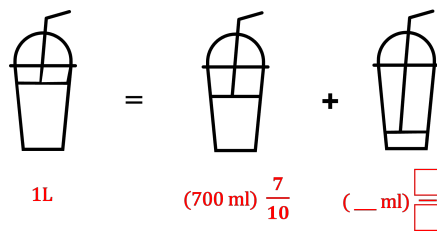
Total number of square in box A = \_\_\_\_\_.  
 Number of shaded square in box A = \_\_\_\_\_.  
 Shaded part of box A in fraction = \_\_\_\_\_

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: 12** .....

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:  $1 = \frac{7}{10} + \underline{\hspace{1cm}}$

Transposing  $\frac{7}{10}$  to other sides,  $1 - \frac{7}{10} = \underline{\hspace{1cm}}$

Therefore, result is \_\_\_\_\_.



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# Algebra

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Topics to be Improved	
Monomials, binomials, trinomials and polynomials	Types of algebraic expression
subtraction of algebraic expressions	subtraction of algebraic expressions

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

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**Question: 13** .....

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: 14** .....

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: 15** .....

$5m^2 + m + 0$  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 **Subtraction on expression**



**Question: 16** .....

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: 17** .....

	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: 18** .....

Solve the following:

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

$$\begin{array}{r} 3a - 5b \\ (-) \ 5a - 7b \\ \hline -2a - \_\_\_\_\_\_ \\ \hline \end{array}$$

**Answer:**

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

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

$$\begin{array}{r} 3a - 5b \\ (-) \ 5a - 7b \\ \hline -2a - \_\_\_\_\_\_ \\ \hline \end{array}$$