LaPIS Diagnostic Test Workbook - Mathematics

Name	:	**Dharun Anand A**
Class	:	**7**
Section	:	**C**
School	:	**AKV Public School**
Login ID	:	**AKV170**

Dharun Anand A's Performance Report

Topic wise Performance

(Percentage of fluency)

- Mensuration: 100.0
- Basic arithmetic: 100.0
- Number system: 81.8
- Data handling: 50.0
- Comparing Quantities: 100.0
- Geometry: 60.0
- Algebra: 33.3
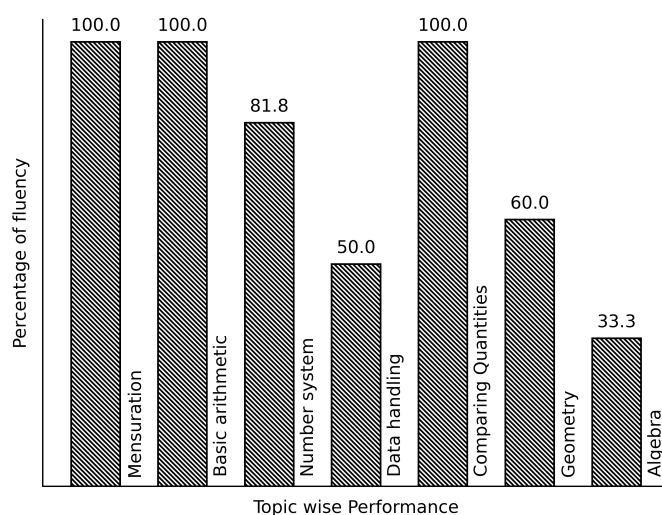
Score: 28/40   **Percentage: 70.0%**

Dharun Anand A'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	Basis of probability
Arithmetic mean, mode and median	Mean, Median and Mode

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

Question: 1 ....

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: 2 ....

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: 3 ....

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**

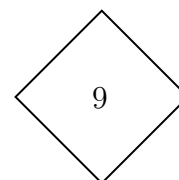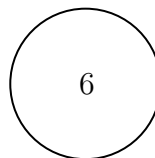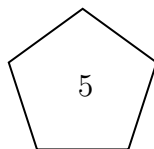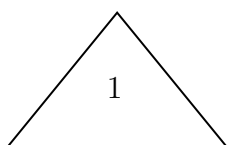### *Question: 4* ....

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 = $\dfrac{\text{_____ of all observation}}{\text{number of observation}}$.

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	
Transversal angle made by transversal	Basics of Transversal angle
Faces vertex and edges	Idenfication of faces,edges and vertices
Right angle triangle and pythagoras property	Basics of Pythagoras property
Criteria for congruence of triangle	Idenfication of criteria of congruence of triangles

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

Question: 7 ....

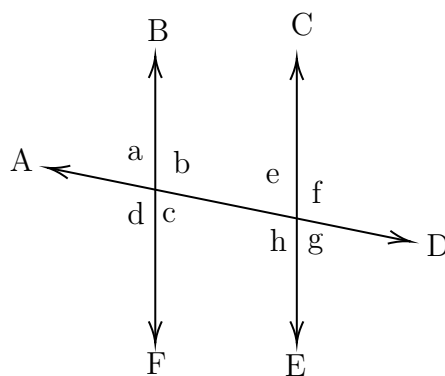In given diagram, ∠ 1 and ∠ 7 are _____ (alternate / corresponding) angles.
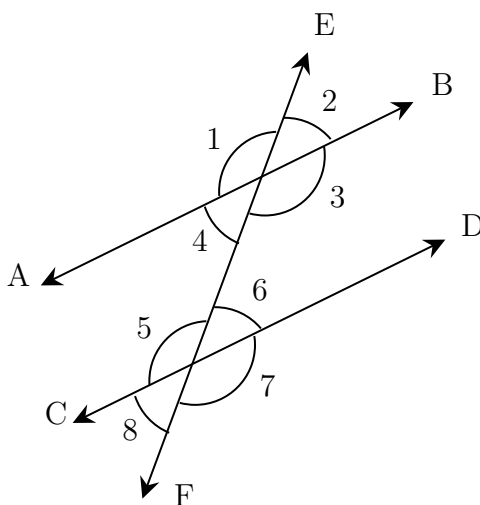
Answer:

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, ∠1 and ∠7 are _____

Question: 8 ....

Find the transversal, alternate angles and corresponding angles in a given diagram.
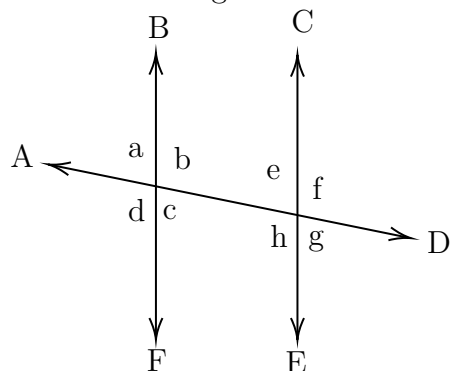

Answer:

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
∠a and ∠g , ∠b and ∠h,	∠a and ∠e, ∠b and ∠f,

Question: 9 ....

Find ∠e and ∠g if ∠a = 30°.

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 ∠a is _____ and its value is _____.
Corresponding angle of ∠a is _____ and its value is _____.

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

Question: 10 ....
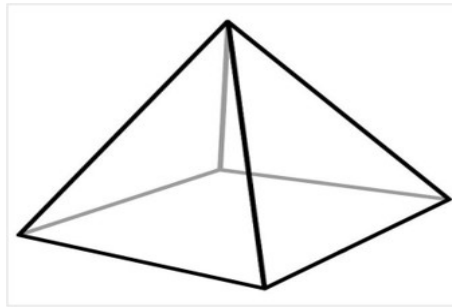
A point at which two or more lines segments meet is called _____(Vertex/ edges/ faces).

Answer:

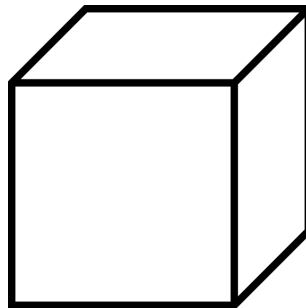_____ has two end point (line/line segment/ray).

A _____is a point where two or more line segments meet(Vertex/ edges/ faces).
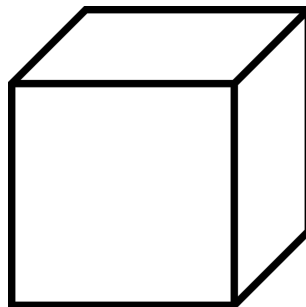
Mark the vertices in the diagram,

Question: 11 ....

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: 12 ....

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 **Pythagoras property**

Question: 13 ....

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

Answer:

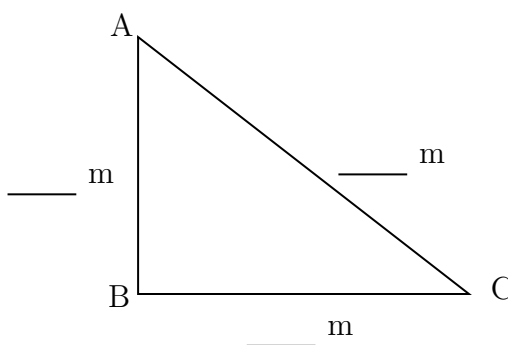Pythagoras theorem is only applicable for _____ triangle.
Longest side of the triangle is _____ (hypotenuse/ legs) and other two sides are called _____(hypotenuse/ legs).
Pythagoras theorem states that _____.

Question: 14 ....

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

Answer:

A

_____ m

_____ m

B

_____ m

C

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

Given: Base = _____, Altitude = _____,

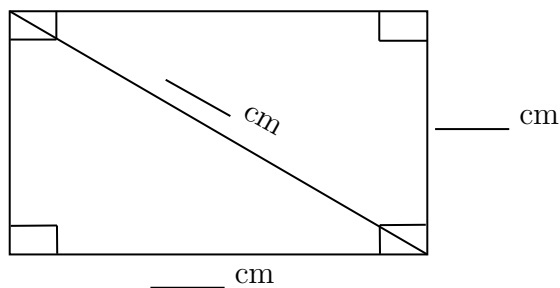Base and altitude are _____ (hypotenuse/ legs) of the triangle.

$$By\ Pythagoras\ theorem,\ (\underline{\quad})^2 = (\underline{\quad})^2 + (\underline{\quad})^2$$
$$\underline{\quad} = \underline{\quad} + \underline{\quad}$$

Therefore, hypotenuse of the triangle is _____.

Question: 15 ....

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 = _____

$$By\ Pythagoras\ theorem,\ (\underline{\quad})^2 = (\underline{\quad})^2 + (\underline{\quad})^2$$
$$\underline{\quad} = \underline{\quad} + \underline{\quad}$$

Therefore, diagonal of the rectangle is _____

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

Question: 16 ....

Circle the groups that contain congruent images.
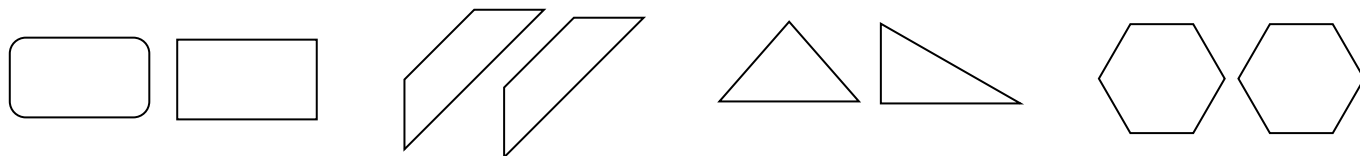
Answer:

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: 17

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 .
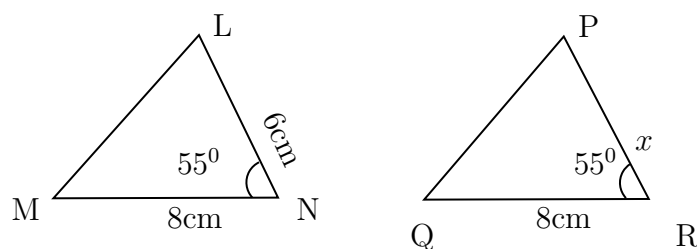
Answer:

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: 18

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 = _____ , _____ and $\angle N =$ _____
The side MN=8 cm in ΔLNM 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 _____ ΔLNM.
Therefore, length of side $PR =$ _____

Number system

Topics to be Improved	
Exponents	Solving exponents
Positive and negative rational numbers	Identification of positive rational numbers

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

Question: 19 ....

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).

$$1000 \text{ can be written as} = 10 \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$$
$$10 \text{ is raised to the power of } \underline{\hspace{0.5cm}} = (10)^{\underline{\hspace{0.5cm}}}$$

Question: 20 ....

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.

$$\text{In this exponential form } (-2)^3 \text{ , base} = \underline{\hspace{0.5cm}}, \text{ power} = \underline{\hspace{0.5cm}}.$$
$$(-2)^3 = \underline{\hspace{0.5cm}} \times \underline{\hspace{0.5cm}} \times \underline{\hspace{0.5cm}} = \underline{\hspace{0.5cm}}.$$

Question: 21 ....

   (i) Tenth power of 100 is ___ ($(10)^{100}$ or $(100)^{10}$).

   (ii) k is raised to the power of 5 is ___ ($(k)^5$ or $(5)^k$).
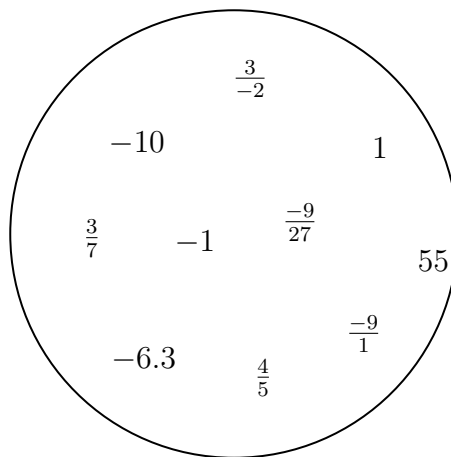
Answer:

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 **Positive and Negative rational numbers**

Question: 22 . . . .

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: 23 . . . .

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

Answer:

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

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

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

Question: 24 ....

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

Algebra

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

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

Question: 25 ....

If ☺$= 5$, then 5 ☺ $+5 =$ _____

Answer:

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

Question: 26 ....

Which of the following number can be placed in the box to make the equation correct (-2, -1, 0, 1, 2)
$7\boxed{} + 3 = -4$

Answer:

The given equation is 7___ $+3 =$-4 Substitute the values (-2, -1, 0, 1, 2) in the circle,
$7\times$ ___$+3=$ ___
$7\times$ ___$+3 =$ ___
$7\times$ ___$+3 =$ ___
$7\times$ ___$+3 =$ ___
$7\times$ ___$+3 =$ ___
Therefore, _____ is the number that can be placed in a box to make the equation correct.

Question: 27 ....

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

Answer:

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

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

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

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

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

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

Question: 28 ....

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: 29 ....

	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: 30 ....

Solve the following:

$$13x + \underline{\quad}$$
$$(+) \quad 12x + 10y$$
$$\underline{\quad} + 25y$$

$$3a - 5b$$
$$(-) \quad 5a - 7b$$
$$-2a - \underline{\quad}$$

Answer:

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

$$13x + \underline{\quad}$$
$$(+) \quad 12x + 10y$$
$$\underline{\quad} + 25y$$

$$3a - 5b$$
$$(-) \quad 5a - 7b$$
$$-2a - \underline{\quad}$$

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

Question: 31 ....

Shade the like terms.

3a $3a^2$ 3b   6a   3c   33a   9a

Answer:

Given terms are _____ .
Two or more term have _____ (same/ different) variables is called like terms.
Here, like terms are _____ .

Question: 32 ....

Complete the expression $7r^2 + $ r $\boxed{} - 2\boxed{} = \underline{\quad}r^2$

Answer:

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

$$7r^2 + r\,\boxed{} - 2\,\boxed{} = \left(7 + \underline{\quad} - 2\right)r^2 = \underline{\qquad}$$

Question: 33
....

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 **Types of expression**

Question: 34
....

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: 35
....

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: 36 . . . .

$5m^2 + m + 0$ 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.