

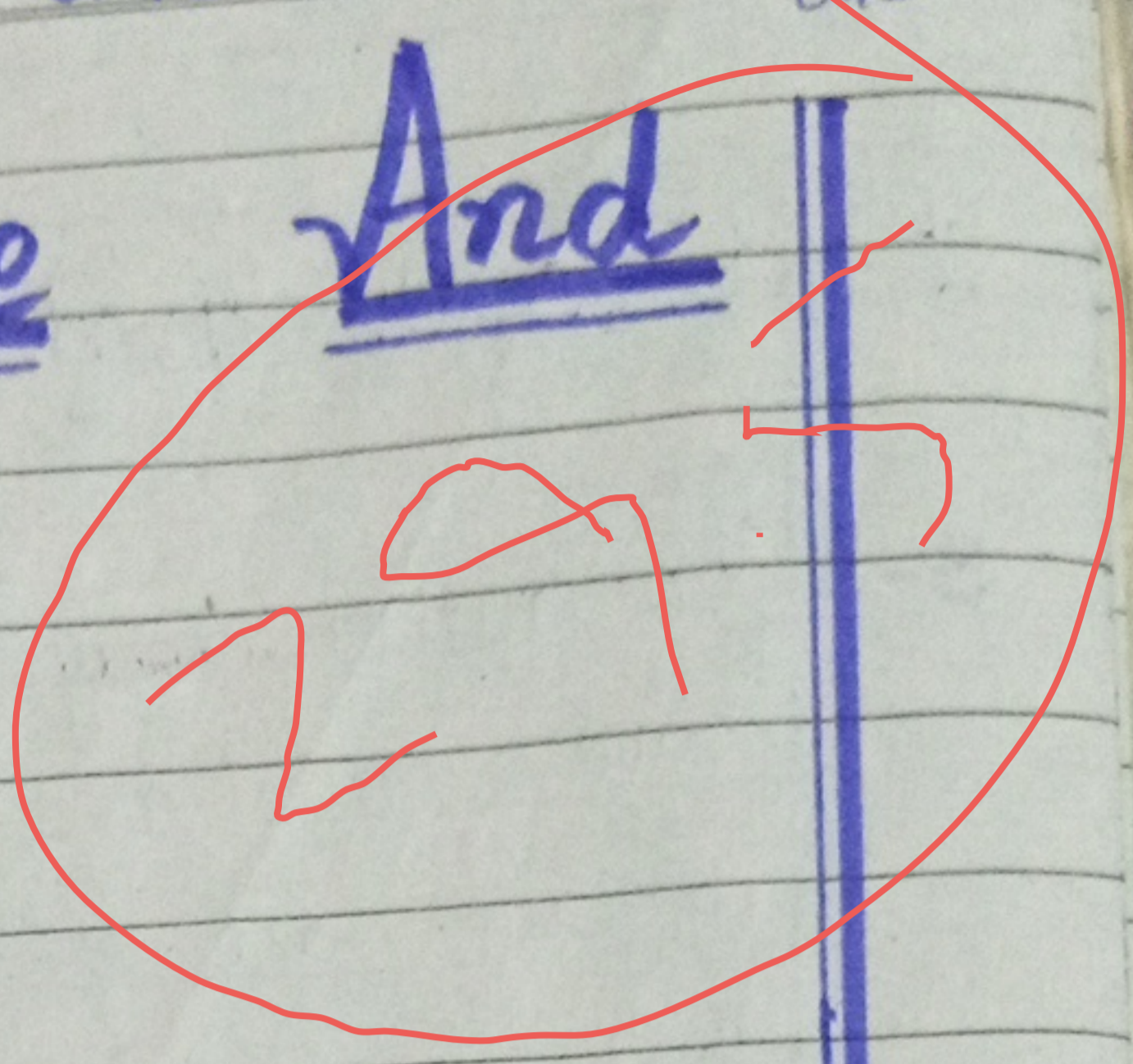


General Instructions

1. Give numbering to headings
2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.
3. Do not use table for comparison and contrast questions.
4. Draw figures/diagram/flowchart where needed.
5. Start new question from fresh page.
6. Write unit of the answer in ability section.
7. Explain mathematical steps and the reasoning for better score.
8. Change colour scheme for references to give them more visibility.
9. Manage time well.
10. Wide page borders are discouraged. Should be reasonable.
11. Avoid writing wrong references.
12. Give more weightage to expressedly asked part/s of the question.

General Science
Ability

And



Part II :-

Section I :-

Question no 5 :-

Part a :-

Give structure and function of Human ear?

Answers:-

- Our ears are incharge of collecting sounds, processing them and sending signals to brain.
- Ears also help to keep balance.

Structure:-

→ The ear is made up of three different

sections:

- The outer ear
- The middle ear
- The inner ear



Diagram?

The outer ear:-

→ It consists of an outer funnel like structure called auricle, an S-shaped tube, the external auditory meatus

Function:-

→ The auricle of ear helps to collect sound waves travelling through air.

→ later it is sent to tympanic membrane

→ sound makes ear drum vibrate, then transfer sound energy to tiny bones and seek vibration.

The middle ear:-

→ It consists of an air filled space having 3 bones called auditory ossicles.

→ The auditory ossicle being smallest bone in the body named according to shape:

- The malleus (hammer)
- Incus (anvil)
- Stapes (stirrup)

→ A Eustachian tube connect middle ear to throat

Functions:-

→ It maintains equal air pressure on both sides of ear drum.

→ Transfer sound energy of tympanic membrane.



The inner ear:-

→ It consists of a complex system of inter-communicating chambers and tubes called labyrinth.

The part of the labyrinth includes

- Cochlea
- Semicircular canals
- Vestibule

Function:-

→ Vibrations entering the perilymph cause movements in the fibres of cilia. The fibres generate a message that is sent to brain through auditory nerve.

Part b:-

What is digestive system? What is the role of small intestine in digestion.

Definition:-

→ The process of breaking down food by mechanical and enzymes action in the stomach and intestines into substances that can be absorbed by the blood.



Explanation:-

→ In humans protein must be broken down into amino acid, starches into simple sugar & fats into fatty acid and glycerol.

Types:-

→ Digestion is divided into two types:-

1- Chemical digestion:-

→ is the action of various enzymes and juices secreted in the process.

2- Mechanical digestion:-

→ is simply the aspect of digestion achieved through a mechanism or movement.

Role of small intestine:-

→ It is the largest organ of digestive tract.

It is divided into following sections:-

1- Duodenum:-

→ This is the place where the food digestion reaches its completion. and where the acidity of chyme is nullified.

→ The liver produces bile which is stored in gallbladder until needed.

→ The pancreas produce enzymes like trypsin, lipase, and amylase that digest protein, fats carbohydrates



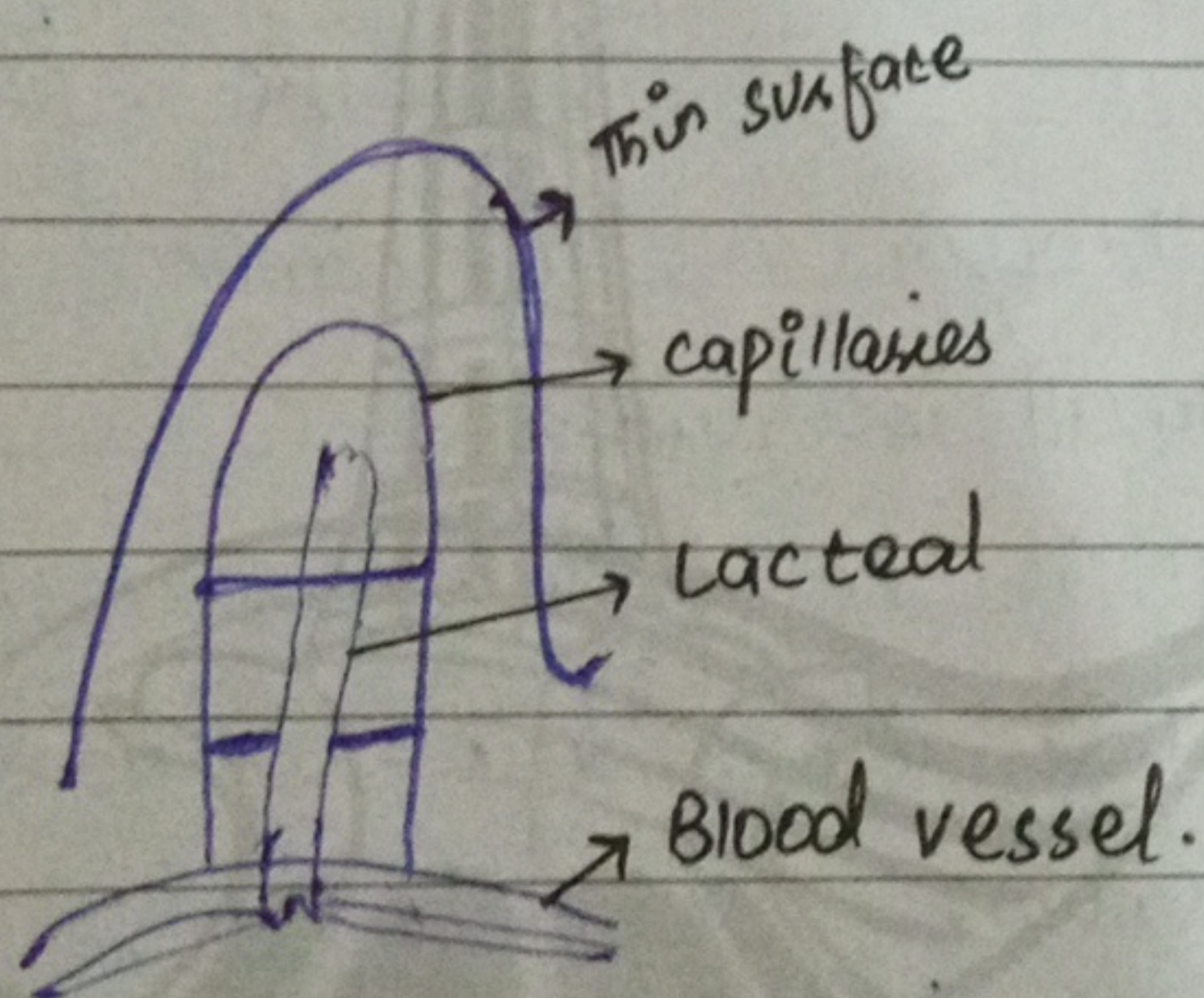
→ Glands in the intestinal walls secrete additional enzymes that break down starches and complex sugars into nutrients that intestine absorb.

→ The blood absorb the nutrients by process of assimilation.

2- Jejunum and Ileum:-

→ Peristalsis pushes the nutrients liquid out of duodenum into Jejunum.

→ Villi (hair-like structure) began to absorb amino acid, sugar, fatty acid and glycerol.



Part C:-

Write a short note on vitamins?

Q1 Definition:-

→ vitamins is any of the organic



compounds that the body requires in small amount to maintain health and function properly.

Types:-

- vitamins are classified into two groups:

fat-soluble vitamins:-

→ It include vitamin A, D, E and K which are usually absorbed by the food that contain fats.

→ fats containing these vitamins are broken down by bile and then the body absorbs the broken products and vitamins.

→ Excessive fat soluble are stored in body's fat, liver kidney.

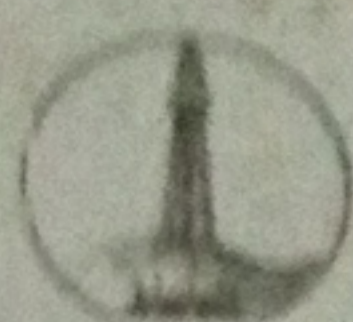
→ These vitamins are not needed to be consumed every day to fulfill body needs.

Water Soluble:-

→ It includes vitamin C and vitamin B complex.

→ vitamin B is composed of eight vitamin by together called vitamin B complex

→ It includes B1 (Thiamine) B2 (Riboflavin) B3 (Niacin), B5 (Panthonic) B6, B7, B8 (Folic acid), B9.



- These can't be stored in body
- foods that have water soluble must be taken daily.

∴ Part d :-

Describe the functions of Pituitary Gland?

Definition :-

- Pituitary gland is a very small oval gland lying at the base of brain. It is also called master gland.
- It control secretions of other gland.

Types :-

It is divided into two sections

- 1- An anterior (meaning front)
- 2- A posterior (meaning back)

Hormones by Anterior pituitary :-

- Thyroid stimulating hormone
- Follicle stimulating hormone
- Growth hormone

Hormones by posterior pituitary gland :-

- Anti diuretic hormone
- oxytocin



SECTION II

Question no 6:-

∴ Part a:-

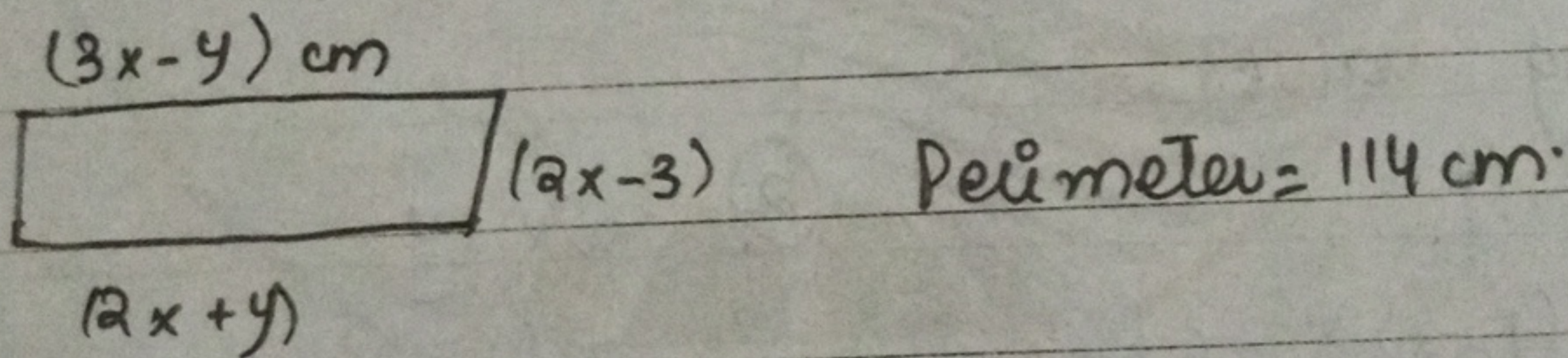
Identify the series :-

i- 10, 100, 200, 310, 619

ii- 3, 7, 23, 95, 9023

∴ Part b:-

The Perim ... -- area of rectangle.



$$\text{Perimeter} = 2(l+w)$$

$$114 = 2((3x-4) + (2x-3))$$

$$114 = 2(5x - y - 3)$$

$$114 = 10x - 2y - 6$$

$$114 + 6 = 10x - 2y$$

dividing eq by 2

$$\frac{120}{2} = \frac{10x - 2y}{2}$$

$$60 = 5x - y \rightarrow (i)$$



opposite sides be equal:-

$$L_2 = L_1$$

$$3x - y = 2x + y$$

$$3x - 2x = y + y$$

$$x = 2y \rightarrow \text{(ii)}$$

Putting value of x in (i)

$$5x - y = 60$$

$$5(2y - y) = 60$$

$$10y - y = 60$$

$$9y = 60$$

$$y = 6.6 \text{ cm}$$

putting value of y in (ii)

$$x = 2y$$

$$x = 2(6.6)$$

$$x = 13.2 \text{ cm}$$

Putting values:-

$$\begin{aligned} \textcircled{1} \quad 3x - y & \\ &= 3(13.2) - 6.6 \\ &= 33 \text{ cm} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 2x + y & \\ &= 2(13.2) + 6.6 \\ &= 33 \text{ cm} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad 2x - 3 & \\ 2(13.2) - 3 & \\ &= 23.4 \text{ cm} \end{aligned}$$

$$\text{Area} = L \times w$$

$$= 33 \times 23.4 \text{ cm}^2$$

$$= 772 \text{ cm}^2 \text{ Answer.}$$



Part c:-

Nisha is ----- Present age:

$$\text{Nisha present age} = x$$

$$\text{Romi present age} = (x - 15)$$

$$\text{Five years ago Nisha} = (x - 5)$$

$$\text{Romi} = (x - 20)$$

Acc. to question:

$$(x - 5) = 3(x - 20)$$

$$x - 5 = 3x - 60$$

$$2x = 55$$

$$x = 27.5 \text{ years Answer}$$

Nisha's present age is 27.5 Years

Part d:-

210 oranges ----- needed?

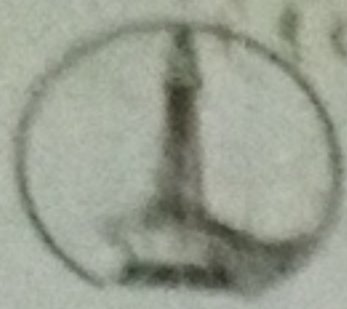
HCF :-

$$210 = 2 \times 3 \times 5 \times 7$$

$$252 = 2 \times 2 \times 3 \times 2 \times 7$$

$$294 = 2 \times 3 \times 7 \times 13$$

Common factor = 2, 3, 7.



HCF = $2 \times 3 \times 7 = 42$. Answer.

The biggest possibility of carrots are 42.

Question 7:-

Part a:-

During sale ---- shirts?

original price of shirt = x .

clerk raised price by 20%.

New price = $1.2x$

New price = 80 high

$1.2x - 0.8x$

$1.2x - x = 80$

$0.2x = 80$

$x = 400$ Answer.

original price of shirt is 400.

Part B:-

In a ---- SISTER?

Brother = Q D G S N Q A

SISTER = Q D S R H R

² B	¹⁸ R	¹⁵ O	¹⁰ T	⁸ H	⁵ E	¹⁸ R
Q	D	G	S	N	Q	A
17	4	7	19	14	15	1

Reasoning?

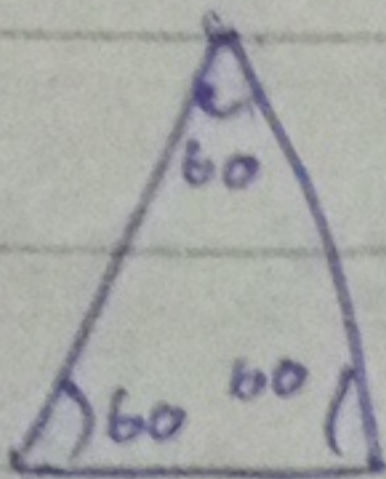


M	9	M	20	C	18
S	1	S	T	E	R
G	D	S	R	H	R
H	4	M	18	B	18

Part c:-

Equilateral triangle:-

It is a triangle in which all three sides are equal and are equal to 60° degree.

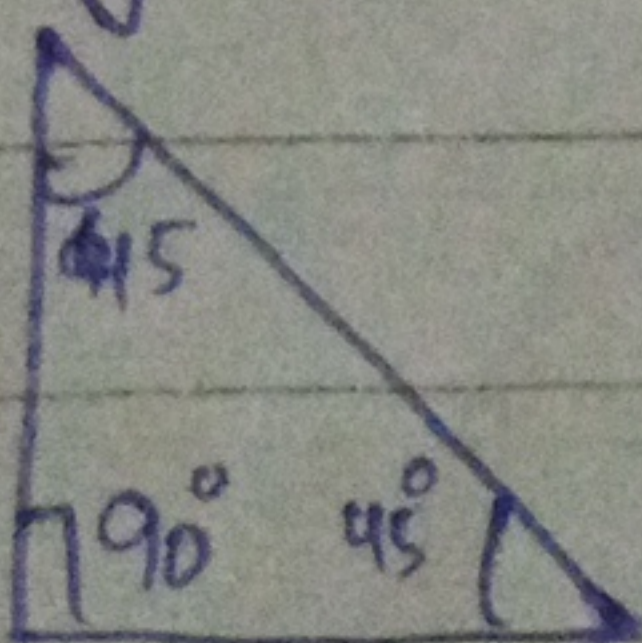


A Triangle isosceles and right:-

A triangle which is isosceles and right at the same time is called 45-45-90 triangle.

Two legs are equal but hypotenuse is twice as each leg.

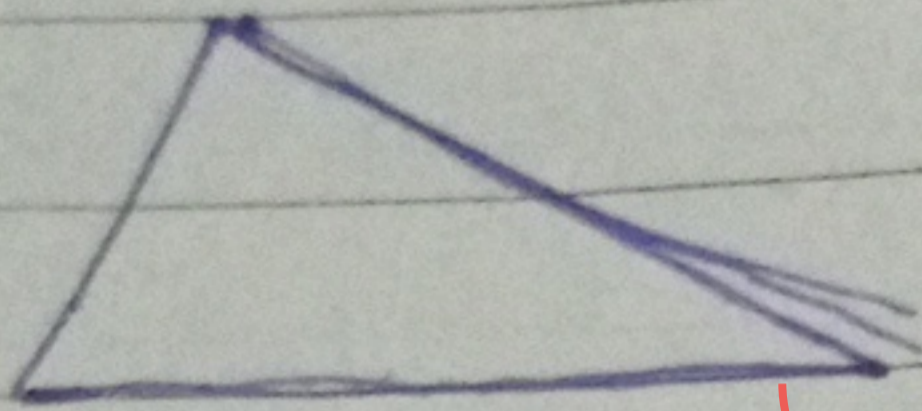
The two acute angle are of 45° and right angle is 90° .





Scalene Triangle:-

A triangle in which all three sides are of different length and angle.



All of different measurements.

Part d:-

A Pizza - - - - Raisin?

$$\text{Probability} = \frac{\text{no. of favourable outcome}}{\text{no. of total outcome}}$$

$$= \frac{3}{8}$$

So the possibility of pizza picking a slice with Raisin is $\frac{3}{8}$.