

Batch = 342

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(1)

* General Science and Ability *

Section II

Q # 7

- a) During a sale a clerk was putting a new price tag on each item. On one shirt, he accidentally raised the price by 20% instead of lowering it by 20%. As a result the price on the tag was Rs. 80 too high. What was the original price of the shirt?

Solution:-

- Let

The original price of shirt = x

raised in price of shirt = 20% of x

$$20\% \text{ of } x + x = 80$$

$$\frac{20}{100}x + x = 80$$

$$\frac{1}{5}x + x = 80$$

$$\frac{x + 5x}{5} = 80$$

$$6x = 80 \times 5$$

$$6x = 400$$

$$x = \frac{400}{6}$$

83

$$= \boxed{66.6}$$

$$\begin{array}{r} 66.6 \\ 6 \overline{) 400} \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \end{array}$$
$$\begin{array}{r} 66 \\ 3 \overline{) 200} \\ \underline{18} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

b) In a certain code BROTHER is written as QDGSNQA. What will be code for SISTER?

Solution

B R O T H E R

Q D G S N Q A

S I S T E R

Q D S R ~~Q~~^H R

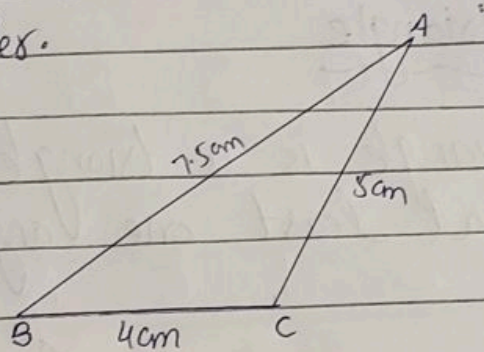
QDSRHR

A B C
D E F
G H I
J K L M
N O P Q
R S T U
V W X Y Z
R O
Q U O P

c) Define and Draw the following.

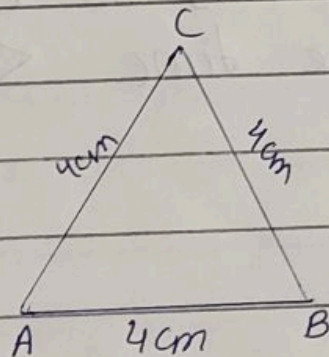
i) Scalen Triangle:

Scalen triangle is a triangle which has no equal sides. All the sides are different from each other.



ii) Equilateral triangle

Equilateral triangle is a triangle which has three equal sides and equal angles.



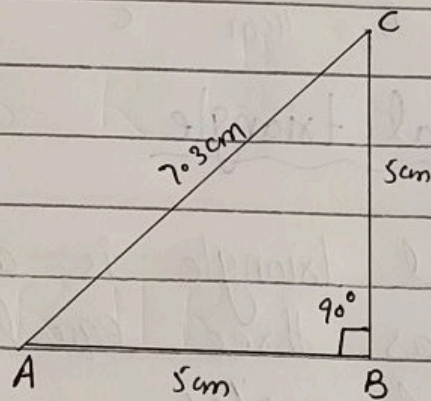
c) A triangle which is Isosceles and Right at the same time.

* Isosceles triangle

It is a triangle which has two equal sides.

* Right triangle

Right triangle is a triangle which has at least one angle of 90° .



Two equal sides \overline{AB} and \overline{BC}
and at the same time $\angle B = 90^\circ$

d) A Pizza is divided into 8 slices in which 3 slices contain raisin in it; shiza picks a slice, what is the probability that she will pick a slice with raisin?

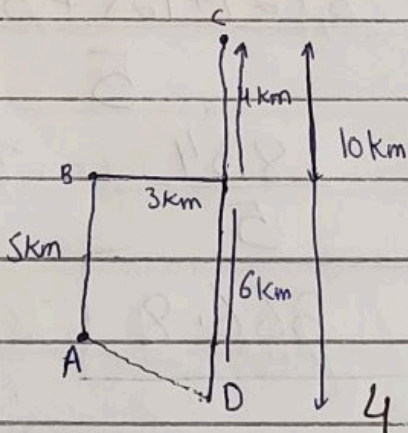
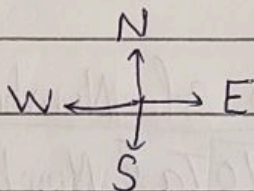
Pizza is divided into 8 slices
3 slices contain raisin

Probability of shiza, pick a slice with raisin, will be $\boxed{\frac{1}{3}}$

← Q ≠ 8 →

a)

Solution:-



He is at south and 4km far from starting point.

b) Find the arithmetic mean of Cubes of 1st five Prime Numbers.

Solution

First five Prime Numbers

2, 3, 5, 7, 11

Cubes of these five Numbers

$2^3, 3^3, 5^3, 7^3, 11^3$

$$2^3 = 2 \times 2 \times 2 = 8$$

$$3^3 = 3 \times 3 \times 3 = 27$$

$$5^3 = 5 \times 5 \times 5 = 125$$

$$7^3 = 7 \times 7 \times 7 = 343$$

$$11^3 = 11 \times 11 \times 11 = 1331$$

mean = $\frac{\text{Sum of Numbers}}{\text{Total Numbers}}$

$$= \frac{8 + 27 + 125 + 343 + 1331}{5}$$

$$= \frac{1834}{5} = 366.8$$

$\text{Mean} = 366.8$

R.W

2^3

$2 \times 2 \times 2$

$2 \times 2 \times 5$

$\frac{5}{125}$

6×49

$\frac{7}{343}$

11

11

11

11

121

11

121

121

1331

125

35

160

343

503

1331

1834

366.8

5

1834

15

33

30

34

30

40

40

c) A group of 50 men can construct 20 km road in 40 days. How long will 70 men take to complete same length of road.

Solution

Men	days	length
↓ 50	↑ 40	↑ 20
↓ 70	↑ x	↑ 20

$$\frac{x}{40} = \frac{50}{70}$$

$$70x = 50 \times 40$$

$$70x = 2000$$

$$x = \frac{2000}{70} = 28.57$$

$$x = 28 \text{ days}$$

$$\begin{array}{r} 50 \\ 40 \\ \hline 2000 \end{array}$$

$$\begin{array}{r} 28.57 \\ 7 \overline{) 200} \\ \underline{14} \\ 60 \\ \underline{56} \\ 40 \\ \underline{35} \\ 5 \end{array}$$

$$\begin{array}{r} 50 \\ 40 \\ \hline 1 \end{array}$$

d) Zahid left a property worth 1750,000. His family had to pay off debt 150,000. The rest of money was distributed b/w a son and a daughter. How much did each child receive if share of a son was double than that of a daughter?

Solution:

Zahid left a property = 1750,000
 Total Debt = 150,000

After paying debt left over money
 $1750,000 - 150,000$
 $= 1600,000$

$$\begin{array}{r} 1750,000 \\ - 150,000 \\ \hline 1600,000 \end{array}$$

Share of son and daughter
 2 : 1

Sum of ratio = $2 + 1 = 3$

$$\begin{array}{r} \textcircled{1} 1600,000 \\ \underline{\quad 2} \\ 3200,000 \end{array}$$

* Share of son = $\frac{2}{3} \times 1600,000$

$$= \frac{3200,000}{3} = \boxed{1066,666}$$

$$\begin{array}{r} 1066,666 \\ \underline{\quad 3} \\ 3200,000 \end{array}$$

$$\begin{array}{r} 200 \\ \underline{\quad 18} \end{array}$$

$$\begin{array}{r} 20 \\ \underline{\quad 18} \\ 20 \end{array}$$

* Share of daughter = $\frac{1}{3} \times 1600,000$

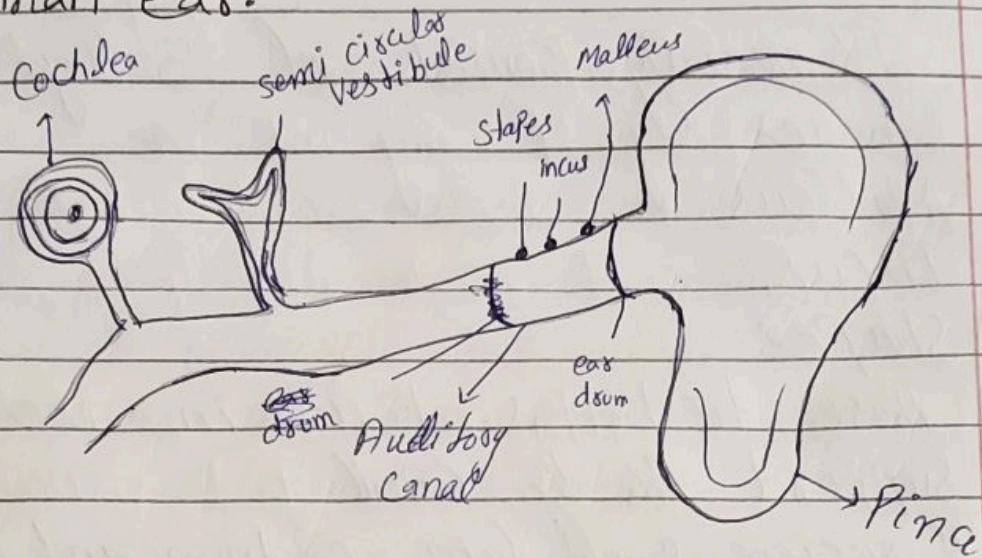
$$= \boxed{533,333}$$

(c)

Section 1

Q # 5

a) Give structure and function of human ear.



Human ear

It is a sensory organ.

Its main function is listening.

It is divided into 3 parts

Outer ear

Inner ear

Middle ear

Outer ear consists of 3 parts

Pinna, auditory canal and ear drum.

* Pinna it is the outermost part of the ear which interact with sound waves.

Auditory canal: from where sound enters to the ear.

Ear drum: Sound waves strikes with ear drum and produces sound.

Middle ear

It mainly consists of 3 tiny bones

- i) Malleus
- ii) Incus
- iii) Stapes

These ~~to~~ bones helps in mechanical support to the canal.

It receive sound from ear drum and take to outer ear.

Outer ear

It consist of semicircular canal contains fluid in it, which helps in maintaining body balance as per body position.

Vestibules: - It consist receptors

Cochlea: It is the hearing part of the ear.

Cochlea convert the sound waves into electric signals. It also picks electric signals.

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

Digestive system

It is a system in which we take food, ~~and~~ this food is passing through different organs, ~~and~~ processes through chemical reactions and getting desired elements and minerals from it, which are later used in energy.
Organs of digestive system:-

Mouth → Oesophagus → Stomach → small intestine → large intestine.

Pancreas and liver also takes part.

Role of small intestine:-

When food is crushed in stomach and reached to small intestine.

In small intestine ~~all~~ all the necessary nutrients are absorbed into blood stream and remaining unnecessary elements ~~are~~ are get rid off. The main process of digestive system occurs in small intestine.

c) Write a note on vitamins.

Vitamins are the substances which are needed by body to work better. Some important vitamins are A, B, C, D and K. Right amount of vitamins are needed for the body. If any of the vitamin is left or deficient, body can not work properly.

Vitamin A. Vitamin A is needed for skin and good vision. deficiency of vitamin A causes night blindness and less collagen produced in the body.

Source of vitamin A: - leafy food, carrots, green vegetables.

Vitamic C

It is also called ascorbic vitamic. It presents in citrus food like lemon, oranges.

Deficiency of vitamic C causes Beri Beri disease which is related to skin.

(u)

Vitamin D

Main source of vitamin D is sunlight. It also get from seeds, vegetables.

Deficiency of vitamin D causes Rickets in child. which is related to bone diseases, bones can not go properly.

Vitamin B

It has many types B_1 , B_{12} , B_{14} so on. Its main function is strengthening muscles and provide energy. Main sources are green leafy vegetables, iron related fruits and vegetables, Beans etc.

d) Describe the function of Pituitary glands.

Pituitary gland release some hormones which helps in body function.

Main function of the Pituitary glands:-

- 1) It helps in growth.
- 2) It helps in reproduction system.

- iii) It controls the body in stress and trauma.
- iv) It produces a hormone which help in to control the breast milk production in female.
- v) It send message to adrenal glands to make the hormone when kidneys are in stress.

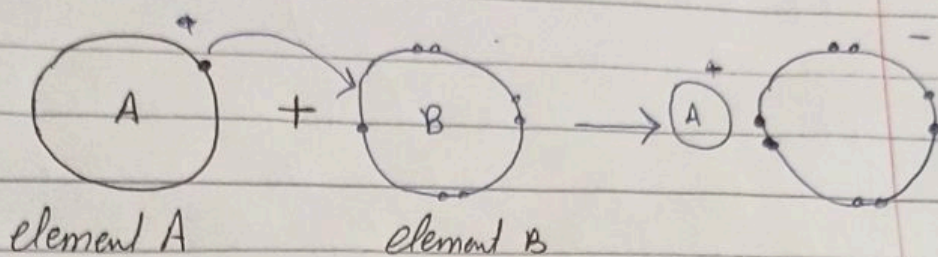
←—————→

Q ≠ 3

d) Distinguish ionic and Covalent bond with examples.

Ionic bonds:

- Ionic Compounds are formed by complete share of electron.
for example Na^+Cl^-
- They are formed between solids.
- They are good conductors of heat and electricity.



Element B needed one electron to complete Octet. element A will ~~lose~~ lose one electron which gained by element B. The element which loses electron will charge + and the element which get will charge - sign.

Covalent bonds

Covalent bonds are sharing of electron. ~~to~~ for example H_2O is a covalent bond

- They are formed between solid, liquid and gasses.
- They are good insulator.

