

Section - II

Question # 06

Good for math portion
Also attempt theory portion

a) Data:-

Age of father five years ago =
thrice - the age of son

Current Age of son = 30 years

Current Age of Father = ?

Suppose current Age of Father = x

Solution:-

Age of	Father	Son
Current Age	x	30
Age five years ago	$x-5 = 3(30-5)$	$30-5$

To find current Age of Father
compare current age with the age
five years ago

$$x-5 = 3(30-5)$$

$$x-5 = 90-15$$

$$x-5 = 75$$

$$x = 75+5$$

$$\boxed{x = 80}$$

So, current Age of Father is 80
years old.

b) Data:

$$\text{Mean} = 50$$

$$\text{Numbers} = 10, 30, Y, 50$$

$$\text{value of } Y = ?$$

solution:-

$$\text{Mean} = \frac{\text{sum of all observation}}{\text{Total \# of observation}}$$

putting values in Formula.

$$50 = \frac{10 + 30 + Y + 50}{4}$$

$$50 \times 4 = 10 + 30 + Y + 50$$

$$200 = 90 + Y$$

$$200 - 90 = Y$$

$$\boxed{110 = Y}$$

So, the value of Y is 110 Ans.

c) Find the missing number

$$1) 2, 6, 18, 54, \underline{162}$$

Series is following multiplication of 3 in each number

$$2 \times 3 = \underline{6}$$

$$6 \times 3 = \underline{18}$$

$$18 \times 3 = \underline{54}$$

$$54 \times 3 = \underline{162}$$

So, the next number in series is 162.

$$2) \quad 3125, 256, \underline{27}, 4, \underline{1}$$

$5^5 \quad 4^4 \quad 3^3 \quad 2^2 \quad 1^1$

The number is following series of root of number same as number itself, like:

$$1^1 = 1$$

$$2^2 = 4$$

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

$$4^4 = 4 \times 4 \times 4 \times 4 = 256$$

$$5^5 = \underbrace{5 \times 5}_{25} \times \underbrace{5 \times 5}_{25} \times \underbrace{5 \times 5}_{25} = 3125$$

So, the missing number in series is 27.

Ans.

(d) Data:-

Product of two numbers = 320

Ratio of numbers = 1:5

Find: difference between square of numbers.

Solution:-

Suppose the numbers are N and $5N$ respectively.

So, Acc to the question

$$N \times 5N = 320$$

$$5N^2 = 320$$

$$N^2 = \frac{320}{5}$$

$$N^2 = 64$$

Taking root on both sides

$$\sqrt{N^2} = \sqrt{64}$$

$$N = 8$$

First number is $N = 8$

Second number is $5N = 5 \times 8 = 40$

Now, we need to find the difference of squares of these numbers.

So, Acc to question

$$(40^2 - 8^2)$$

$$= 1600 - 64$$

$$= 1536$$

1600

-64

1536

So, the difference between square of these numbers is

1536

Ans!

Question # 8

a) Data:-

Cow travel :-

1st ^{move} position = South 5 Km

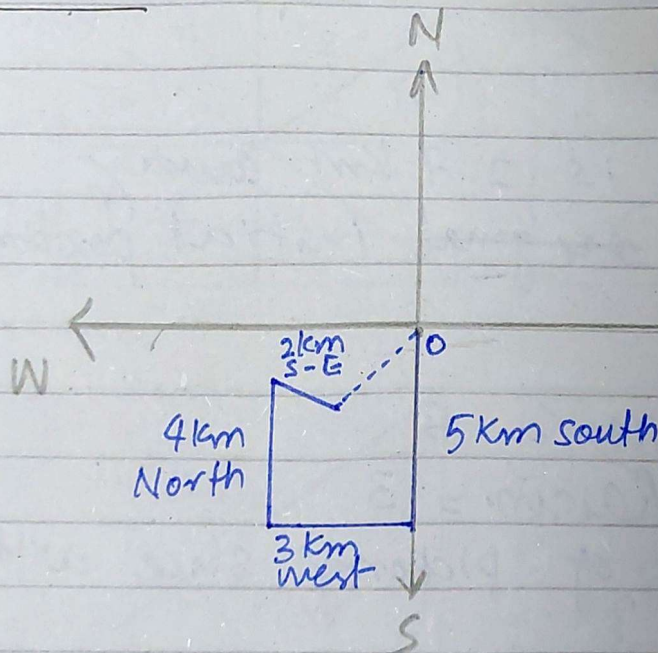
2nd ^{move} position = West 3 Km

3rd move = North 4 Km

4th move = South-east 2 Km

Find distance from original
point.

Solution:-



We need to find x and y axis
component of each of the
four displacement

	x	y
$d_1 =$	0	-5 km
$d_2 =$	-3 km	0
$d_3 =$	0	+4 km
$d_4 =$	+2 km $\cos 45^\circ$ = 1.41 km	-2 km $\sin 45^\circ$ = -1.41 km
$R_x =$	-1.59 km	
$R_y =$		-2.41

$$R = \sqrt{R_x^2 + R_y^2}$$

$$R = \sqrt{(-1.59)^2 + (-2.41)^2}$$

$$R = \sqrt{2.5281 + 5.8081}$$

$$R = \sqrt{8.3362}$$

$$R = 2.8$$

so, the cow is 2.8 km away from its ~~original~~ initial position

(b) Data:-

Pizza Slices = 8

slice with Raisin = 3

probability of picking slice with Raisin = ?

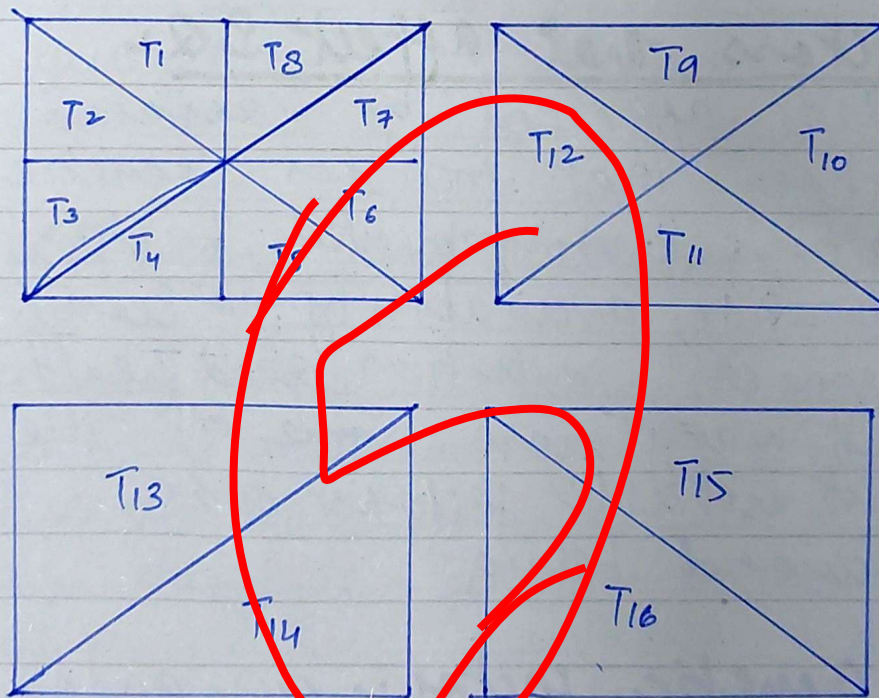
Solution:-

probability of event = $\frac{\text{Possible outcome}}{\text{Total number of outcomes}}$

$$P(E) = \frac{3}{8}$$

So, probability of picking slice with Raisin is $\frac{3}{8}$ Ans!

c) Find number of Triangles in following figure



Total number of triangles in the figure are 16.

Ans.

d) Describe the factors which can affect IQ

2) What is IQ?

The abbreviation IQ comes from the German term Intelligent-Quotient. IQ is a score derived from one of several different standardized tests designed to assess relative intelligence.

2) Factors that affect IQ:

IQ is affected by various factors that includes genetic factor, environmental factor, education, availability of learning resources, nutrition, and healthcare and many more. Some of the most notable factors are discussed below.

a) Genetic factor: our genes do influence intelligence and IQ. Different studies have placed the genetic component at different levels ranging from 30-80%.

The level of genetic influence increases with age at least from childhood through to early adulthood.

b) Environmental Factor:-

Home plays a significant role in early developmental years. Home conditions influence our behaviours attitude. The financial status of the parents, neighbourhood and environmental conditions also affect on the intelligence but due to their socio-economic status:

c) Healthcare and Nutrition:-

Healthcare and nutrition are supposed to play great role in enhancing IQ. prenatal and early nutrition are linked to brain structure, behaviour and intelligence. There is evidence that providing a high nutrition nutrient diet to very premature babies, particularly babies males, can help to reduce the loss of brain size and IQ often experienced by these babies.

d) availability of learning resources:-

Another factor that affects IQ is availability of learning resource. The more resources one have the enhanced IQ can be witnessed. Because vast resources compel mind to ~~kind~~ think out of the box. To find probable outcomes. This thus affects IQ.

e) Health & physical development:-

physical and mental health is related to one's ability to gain desired achievement. A mental activity with delicate health, one may not possess enough energy to engage in mental activity hence affects IQ.

3) Conclusion:- IQ is quotient intelligence which varies person to person. It depends on factors like: health & physical development, nutrition, environment, genes and many others.