

MATHS:

Question NO 1

- (1) What Percentage of Numbers from 1 to 70 have 1 or 9 in the unit's digit.

NO ending in 1 = 1, 11, 21, 31, 41, 51, 61 = 7

NO ending in 9 = 9, 19, 29, 39, 49, 59, 69 = 7

$$7 + 7 = 14$$

$$\frac{14}{70} \times 100\%$$

TO

$$\text{Total percentage} = \boxed{20\%}$$

- (2) Two Numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. Find the ratio of A and B.

$$5\% \cdot A + 4\% \cdot B = \frac{2}{3} (6\% \cdot A + 8\% \cdot B)$$

$$\text{Multiply } 3: 15A + 12B = 12\% \cdot A + 16\% \cdot B$$

$$15A + 12B = 12A + 16B$$

$$15A - 12A = 16B - 12B$$

$$3A = 4B$$

$$\frac{A}{B} = \frac{4}{3}$$

$\Rightarrow$

$$\boxed{A:B = 4:3}$$

(3) A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3.

If C gets Rs 1000 more than D what is B's share.

$$A : B : C : D$$

$$5 : 2 : 4 : 3$$

Let common factor = K

$$A : B : C : D$$

$$5K : 2K : 4K : 3K$$

If $K = 1000$ then $C = 4K$

$$C = 4K$$

$$C = 2(1000)$$

$$C = 2000$$

(4)

If 40% of a number is equal to $\frac{2}{3}$ of another number what is the ratio of first No to second No.

$$40\% x = \frac{2}{3} y$$

$$\frac{40}{100} = \frac{2}{3}$$

$$= \frac{2}{5} x = \frac{2}{3} y$$

$$= \frac{1}{5} x = \frac{1}{3} y$$

$$3x = 5y$$

$$x : y = 5 : 3$$

Science

①

How Satellite is launched? Define the working principle of Gps.

Satellite is any object that revolves around the earth in orbit either circular or elliptical. As moon is a natural satellite there are many other man-made satellites that are closer to earth.

The actual journey begins when Soviet union send SPUTNIK - 1 in 1957.

How satellites are launched:-

Rocket launched satellite in an orbit high above the earth. Earth's gravity provides a centripetal force that keeps a satellite in orbit. Once in place, satellite are powered by large arrays of solar panels or even nuclear powered electric motors.

Gps working:-

Gps is a navigation system that allows users to determine their exact location in land, sea or air. The U.S. Air Force develops, maintains & operates the space and control segments.

Bradford Parkinson, American engineer

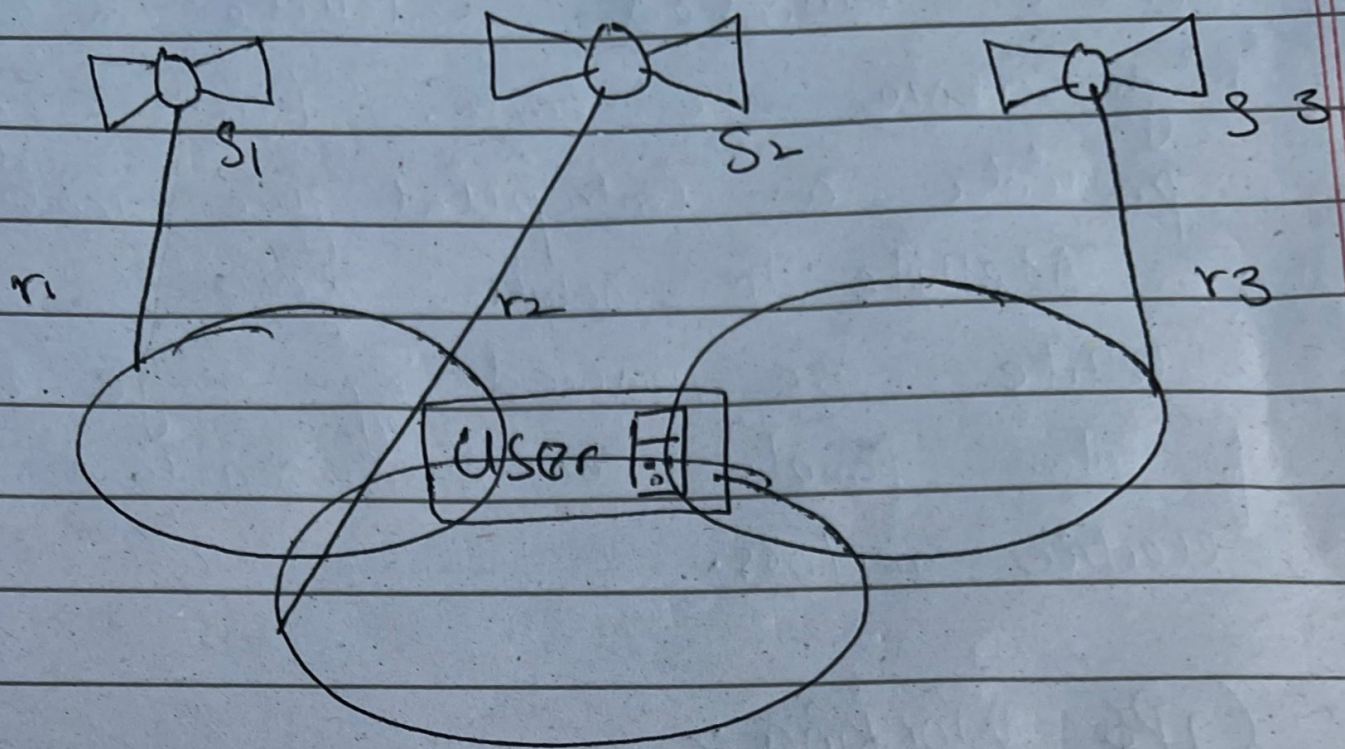
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○ ○ ○ ○ ○ ○

and inventor and U.S. Air Force colonel
is known as Father of GPS.

On ground GPS receiver contain computer
that ~~calculates~~ "triangulates" its position by getting
bearings from three of the four satellite.

The result is provided in the form of ~~these~~
geographical position - longitude and latitude
for most receivers within 100 meters. If
receiver is equipped with receiver display
screen that shows map. If you
are moving your receiver may also be
able to calculate your speed and
direction of travel as well.



Triangulation.