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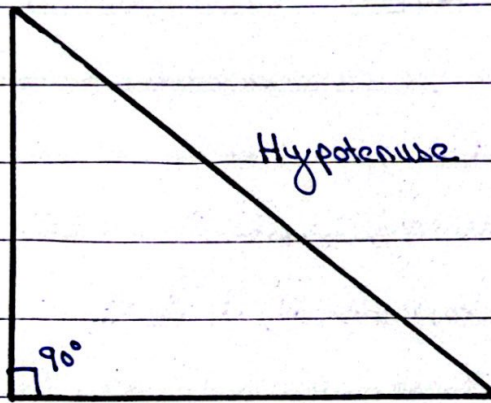
QSA-2016

Day: _____

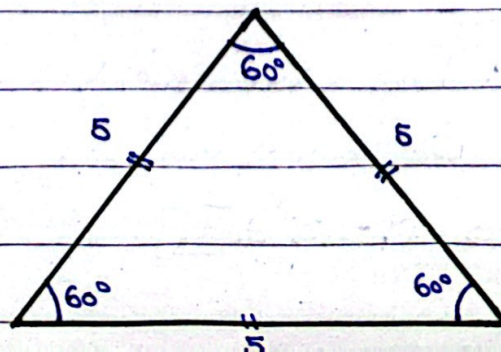
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Section - IIQuestion 10a). Rightangle Triangles

Definition: A right-angle triangle is a type of triangle that has one angle equal to 90° . The side opposite the right angle is called the hypotenuse.

a(ii). Equilateral Triangle

Definition: An equilateral triangle is a triangle in which all three sides and all three internal angles are equal.
All angles measure 60° .



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b) 9 students in a group

Ages: 15, 15, 16, 16, 16, 17, 17, 18, 19

Mean: $\frac{\text{Sum of all ages}}{\text{Total number of students}}$

$$= \frac{15 + 15 + 16 + 16 + 16 + 17 + 17 + 18 + 19}{9}$$

$$= \frac{149}{9} = \boxed{16}$$

Median:

• Ages arranged in ascending order:

15, 15, 16, 16, 16, 17, 17, 18, 19

⇒ Since there are 9 values, the median is the "Middle value"

$$= \underline{\underline{16}} \text{ (5th value)}$$

Mode: It is the value which appears most frequently

⇒ $\boxed{16}$ appears 3 times

Range: The difference between the highest and lowest values

$$= 19 - 15 = \boxed{4}$$

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Q11 50km radius, Total stores: 80

ac). Number of stores served by the distribution company = $3 + 15 + 26 + 20 + 16$
= $\boxed{80 \text{ stores}}$

ii). Mode Common Distance:

= $\boxed{21 \text{ to } 30 \text{ kilometers}}$ (26 stores)

iii) Number of stores that are 35km or more

from the godown:

Add Range: 31-40km + 41-50km

= $20 + 16$

= $\boxed{36 \text{ stores}}$

iv) Percentage of stores 31km or more from godown:

2 Ranges: 31-40km + 41-50km

= $20 + 16 = 36 \text{ stores (Range)}$

$\rightarrow \frac{\text{Range}}{\text{Total number of stores}} \times 100$

Total number of stores

= $\frac{36}{80} \times 100$

= $\boxed{45\%}$ \rightarrow Stores that are 31km or more from the godown.

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b) 5 Students: Ahmad, Ali, Akbar, Nasis, and
Shahbaz

Assumption: Assigning "10kg" weight
to Ali

= Ali: 10kg

Ahmad: $3 \times 10\text{kg}$: 30kg

Akbar: $\frac{10\text{kg}}{5}$: 2kg

Nasis: 2×2 : 4kg

Shahbaz: 4×2 : 8kg

i) Heaviest = Ahmad

ii) Lightest = Akbar

iii) Shahbaz lighter than: Ahmad and Ali

iv) Shahbaz heavier than: Akbar and Nasis

v) ~~Ascending~~ ^{Descending} Order: Ahmad, Ali, Shahbaz, Nasis,
Akbar

Q12 Group Distribution: 1000

Group A: 300

Group B: 325

Group C: 250

Group D: 125

Group AB probability =

$$\frac{\text{Group AB}}{\text{Total Group Distribution}} = \frac{125}{1000}$$

$$= \frac{1}{8} \text{ or } 12.5\%$$

$$= P(AB) = 0.125$$

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Q12(C) 5 Friends: Akbar, Ali, Nasir, Shehboz, and Ahmed

5 Cities: V, W, X, Y, Z

5 Mode of Transport: Bus, Train, ~~Air~~ ^{→ Aeroplane}, Car, Boat

Provided Information:

- Akbar : Y by Car
- Ali : X by Air
- Nasir : ? by Boat
- Shehboz : ? by Train
- Ahmed : (?)

Deductions for Ahmed

- Ali → X, X excluded for Ahmed
- Nasir → Boat + X → X (boat doesn't go so "X" excluded for Nasir)

→ Shehboz → Train → X or W (not possible)

→ Akbar → Y → Car

i) As per deductions: City Z by Boat
Bus = Ahmed

ii) ~~X used Air to travel~~

Person travelling to X used Aeroplane

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Q13 a) \rightarrow Google

b) $Y = mx + c$

$M =$ Gradient / slope of the line

$C =$ Y -intercept, value of Y when $x=0$

Y -intercept assumption: The point where the line crosses the Y -axis

E.g: $C = 5$ so Y -axis $(0, 5)$

Gradient assumption: E.g $m = 4$, for

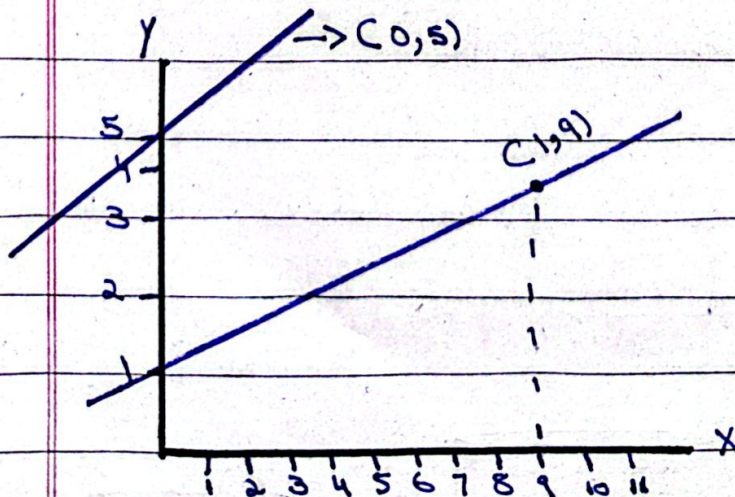
1 unit increase in x , Y increases by 4 units.

$\Rightarrow C = 5$ so Point is $(0, 5) \rightarrow$ Point 1

$M = 4$ so 1 unit \uparrow in x -axis will

\uparrow 4 units along Y -axis so Point is $(1, 9) \rightarrow$ Point 2

Line $\Rightarrow Y = 4x + 5$



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\Rightarrow Point $\Rightarrow (0, 5) \rightarrow$ where line crosses
the y -axis

\Rightarrow Point $\Rightarrow (1, 9) \rightarrow$ Point using $m=4$,
1 unit increase in $x = 4$ unit increase in y .