**Sample Question Paper 04**
**Class -IX Mathematics**
**Summative Assessment – II**

**Time: 3 Hours** **Max. Marks: 90**

**General Instructions:**

(i) All questions are compulsory.

(ii) The question paper consists of **31** question divided into five **section A, B, C, D and E**. Section-A comprises of **4** question of **1 mark** each, **Section-B** comprises of **6** question of **2 marks** each, **Section-C** comprises of **8** question of **3 marks** each and **Section-D** comprises of **10** questions of **4 marks** each. **Section E** comprises of **two questions of 3 marks each** and **1 question** of **4 marks from Open Text theme.**

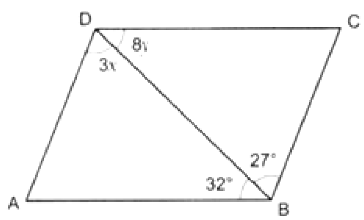
(iii) There is no overall choice.

(iv) Use of calculator is not permitted.

## SECTION-A

Question number **1** to **4** carry **one** mark each.

1. Find the total surface area of a cone whose radius is $\frac{r}{2}$ and slant height 2l.
2. Find the median of the numbers: 4, 4, 5, 7, 6, 7, 7, 12, 3.
3. In a single throw of two dice, what is the probability of getting a sum of 9.
4. In the given figure, ABCD is a $||^{gm}$ . Find x and y




## SECTION-B

Question number **5** to **10** carry **two** marks each.

5. Find the co-ordinate where the linear equation $4x-\frac{2}{3}y=7$ meets at y -axis.
6. Write the linear equation represented by line AB and PQ. Also find the co–ordinate of intersection of line AB and PQ.
7. Prove that $\angle CAD=\angle CBD$, if ABC and ADC are two right triangle with common hypotenuse AC.

8. Show that ar (quad. ABCD)=$\frac{1}{2}$ BD (AM+CN) BD is one of the diagonals of a quadrilateral ABCD, AM and CN are the $\perp$ from A and C
9. Determine the point on the graph of the linear equation x + y = 6, whose ordinates is 2 times its abscissa.
10. The points scored by a basketball team in a series of matches are as follows: 17, 2, 7, 27, 25, 5, 14, 18, 10, 24, 48, 10, 8, 7, 10, 28. Find the median and mode for the data.

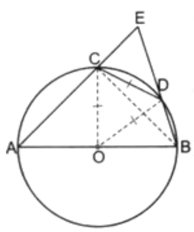
**SECTION-C**

Question numbers **11** to **18** carry **three** marks each.

11. Write four solutions for equations: $2x+y=7$
12. The temperature of a liquid can be measured in Kelvin units as x K or in Fahrenheit unit as y°F. The relation between the two system of measurement of temperature is given by the linear equation $y=\frac{9}{5}(x-273)+32$.

    (i) Find the temperature of the liquid in Fahrenheit if the temperature of the body is 313K.

    (ii) If the temperature is 158°F, then find the temperature in Kelvin.
13. In given figure, AB is a diameter of the circle, CD is a chord equal to the radius of the circle. AC and BD when extended intersect at point E. Prove that $\angle AEB=60°$.




14. The diameter of the moon is approximately one-fourth of the diameter of the earth. What fraction of the volume of the earth is the volume of the moon?
15. A hemispherical tank is made up of an iron sheet 1 cm thick. If the inner radius is 1 m, then find the volume of the iron used to make the tank.
16. The radius of a spherical balloon increases from 7 cm to 14 cm as air is being pumped into it. Find the ratio of surface areas of the balloon in two cases.
17. The sum of the deviations of a set of n values $x_1$, $x_2$, ........, $x_n$ measured from 50 is –10 and the sum of deviation of the values from 46 is 70. Find the values of n and the mean.
18. Over the past 200 working days, the number of defective parts produced by a machine is given in the following table:

| Number of defective parts | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Days | 50 | 32 | 22 | 18 | 12 | 12 | 10 | 10 | 10 | 8 | 6 | 6 | 2 | 2 |

Determine the probability that tomorrow output will have

(i) no defective part,

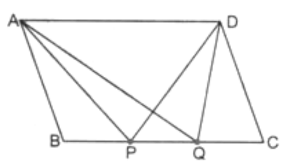
(ii) at least one defective part,
(iii) not more than 5 defective parts.

**SECTION-D**

Question numbers **19** to 28 carry **four** marks each.

19. Construct an angle of 90° at the initial point of a given ray and give the justification.
20. Construct a triangle ABC, in which $\angle B = 60°, \angle C = 45°$ and $AB + BC + CA = 11cm$
21. The bisector of $\angle B$ of an isosceles triangle ABC with AB = AC meets the circum circle of $\Delta ABC$ at P if AP and BC produced meet at Q, prove that CQ = CA
22. Shanti sweets stall was placing an order for making cardboard boxes for packing their sweets two sizes of boxes were required. The bigger of dimensions $25cm \times 20cm \times 5cm$ and the smaller of dimensions $15cm \times 12cm \times 5cm$ for all the overlaps, 5% of the total surface area is required extra. If the cost of cardboard is Rs 4 for 1000 $cm^2$. Find the cost of cardboard required for supplying 250 boxes of each kind.
23. Draw the graph of linear equation x = 4 and y = 5. Find the area formed by the two graph and the axes.
24. A hollow spherical shell is made of a metal of density $9.6 g / cm^3$. The external diameter of the shell is 10cm and its internal diameter is 9 cm. Find
    (i) Volume of the metal contained in the shell
    (ii) Weight of the shell.
    (iii) Outer surface area of the shell.
25. Prove that parallelograms on the same base and between the same parallels have the same area.
26. In given figure, ABCD is a parallelogram. Points P and Q on BC trisects BC. Prove that

$$ar(\Delta APQ) = ar(\Delta DPQ) = \frac{1}{6} ar(||^{gm}\ ABCD)$$




27. Find the unknown entries (a, b, c, d, e, f) from the following frequency distribution of heights of 50 students in a class.

| Class intervals (heights in cm) | frequency | cumulative frequency |
|---|---|---|
| 150-155 | 12 | a |
| 155-160 | b | 25 |
| 160-165 | 10 | c |
| 165-170 | d | 43 |
| 170-175 | e | 48 |
| 175-180 | 2 | f |

28. An organization selected 2400 families at random and surveyed them to determine a relationship between income level and the number of vehicles in a family. The information gathered is listed in the table below:

| **Monthly income (in Rs.)** | **Vehicles per family** | | | |
|---|---|---|---|---|
| | **0** | **1** | **2** | **Above 2** |
| Less than 7000 | 10 | 160 | 25 | 0 |
| 7000 – 10000 | 0 | 305 | 27 | 2 |
| 10000 – 13000 | 1 | 535 | 29 | 1 |
| 13000 – 16000 | 2 | 469 | 59 | 25 |
| 16000 or more | 1 | 579 | 82 | 88 |

Suppose a family is chosen. Find the probability that the family chosen is:

(i) Earning Rs. 10000 – 13000 per month and owning exactly 2 vehicles.

(ii) Earning Rs. 16000 or more per month and owning exactly 1 vehicle.

(iii) Earning less than Rs. 7000 per month and does not own any vehicle.

(iv) Earning Rs. 13000 – 16000 per month and owning more than 2 vehicles.

(v) not more than 1 vehicle.

**SECTION-E (10 Marks)**

**(Open Text from Chapter-8 Quadrilaterals)**

**(*Please ensure that open text of the given theme is supplied with this question paper.)**

29. OTBA Question
30. OTBA Question
31. OTBA Question

# Sample Question Paper 04
# Class -IX Mathematics
# Summative Assessment – II

## Solution

## SECTION-A

Question number **1** to **4** carry **one** mark each.

1. Total surface area of the cone $=\left(\frac{r}{2}\right)\left(2l+\frac{r}{2}\right)=\left(l+\frac{r}{4}\right)$
2. Arranging the data in ascending order, we get
   3, 4, 4, 5, 6, 7, 7, 7, 12
   Here, n **=** 9
   Median $=\frac{(9+1)th}{2}$ observation
   = 5th observation = 6.
3. Outcomes with sum of9 = {(3, 6),(4, 5), (5, 4), (6, 3)}
   P (getting a sum of 9 is) $=\frac{4}{36}=\frac{1}{9}$
4. AB||DC (Opposite sides of a parallelogram)
   ∴ 8y = 32° and 9x = 27° (Alternate angles)
   ⇒ y = 4° and x = 3°

## SECTION-B

Question number **5** to **10** carry **two** marks each.

5. The point where the given linear equation in two variables meets at y – axis, the x co – ordinates will be 0.

   $\therefore 4x-\frac{2}{3}y=7$

   $4(0)-\frac{2}{3}y=7$

   $-\frac{2}{3}y=7$

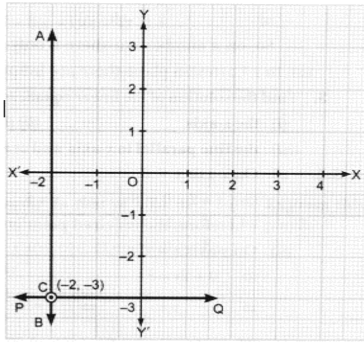
   $y=\frac{-21}{2}$

   Hence, co-ordinate is $\left(0,\frac{-21}{2}\right)$

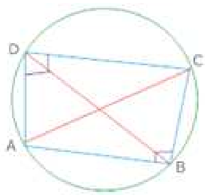
6. AB ⇒ $x = -2$

PQ ⇒ $y = -3$

∴ point of intersection of AB and PQ is C ( - 2, - 3).




7.




$\angle ADC = \angle ABC = 90°$ [AC is the common hypotenuse of it $\Delta s$ $ADC$ and $ABC$]

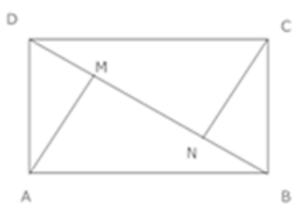
$\angle ADC + \angle ABC = 180°$

$\Rightarrow$ Quadrilateral ABCD is cyclic

Now, chord CD subtends $\angle CAD$ and $\angle CBD$

$\angle CAD = \angle CBD$ [Angle in the same segment]

8.




ar (quad. ABCD) = $ar(\Delta ABD) + ar(\Delta BCD)$

$= \frac{1}{2}(BD \times AM) + \frac{1}{2}(BD \times CN)$

$= \frac{1}{2} BD(AM + CN)$

9. Given y = 2x, putting y = 2x in the equation x +y = 6, we get

x = 2x = 6 ⇒ 3x = 6

$\Rightarrow x = \frac{6}{3}$

⇒ x = 2

Putting x = 2 in the equation y = 2x we get, y = 2 × 2 = 4

∴ the required point is (2, 4)

10. Arranging the data in ascending order, we get

2, 5, 7, 7, 8, 10, 10, 10, 14, 17, 18, 24, 25, 27, 28, 48

Since number of observations (n) = 16, which is even.

Therefore, median is the mean of $\left(\frac{n}{2}\right)^{th}$ and $\left(\frac{n}{2}+1\right)^{th}$ observation, **i.e.,** $8^{th}$ and $9^{th}$ observation.

Here, $8^{th}$ observation = 10

$9^{th}$ observation = 14

Median = $\frac{10+14}{2}$ =12

As 10 occurs most frequently, i.e., three times. So, the mode is 10

**SECTION-C**

Question numbers **11** to **18** carry **three** marks each.

11. $2x+y=7$

We know that any linear equation has infinitely many solutions.

Let us put $x=0$ in the linear equation $2x+y=7$, to get

2(0) + y = 7

y =7

Thus, we get first pair of solution as $(0,7)$.

Let us put $x=2$ in the linear equation $2x+y=7$, to get

2(2) + y = 7 $\Rightarrow$ y + 4 =7

y = 3

Thus, we get second pair of solution as $(2,3)$.

Let us put $x=4$ in the linear equation $2x+y=7$, to get

2(4) + y = 7 $\Rightarrow$ y + 8 =7

y = -1

Thus, we get third pair of solution as $(4,-1)$.

Let us put $x=6$ in the linear equation $2x+y=7$, to get

2(6) + y = 7 $\Rightarrow$ y + 12 = 7

y = -5

Thus, we get fourth pair of solution as $(6,-5)$.

Therefore, we can conclude that four solutions for the linear equation $2x+y=7$ are (0,7), (2,3), (4, -1) and (6,-5).

12. (i) When x = 313K,

y = $\frac{9}{5}(313-273)+32$

$= \frac{9}{5}(40) + 32$

$=72 + 32 = 104°F$

(ii) When y = 158°F, then

$158 = \frac{9}{5}(x - 273) + 32$

$158 - 32 = \frac{9}{5}(x - 273)$

$126 = \frac{9}{5}(x - 273)$

$126 \times \frac{5}{9} = (x - 273)$

70 = x – 273

x = 70 + 273 = 343 K

13. Join OC, OD and BC In $\Delta OCD$, we have

OC = OD = CD (Each equal to radius)

$\Delta ODC$ is an equilateral triangle.

$\angle COD = 60°$

Also, $\angle COD = 2\angle CBD$

$60° = 2\angle CBD$

$\angle CBD = 30°$

Since $\angle ACB$ is angle in a semi-circle.

$\angle ACB = 90°$

$\angle BCE = 180° - \angle ACB$

$180° - 90° = 90°$

Thus, in $\Delta BCE$, we have

$\angle BCE = 90°$ and $\angle CBE = 30°$

$\angle BCE + \angle CEB + \angle CBE = 180°$

$90° + \angle CBE + 30° = 180°$

$\angle CEB = 60°$

Hence, $\angle AEB = \angle CEB = 60°$

14. Let, the diameter of the moon **=** $2R_E$

Diameter of the earth = $2R_E$

According to statement $= R_M = \frac{1}{4}(2R_E)$

$R_E = 4R_M$

$$\frac{Volume\,of\ Moon(V_M)}{Volume\,of\ Earth(V_E)} = \frac{\frac{4}{3}\pi R_M^3}{\frac{4}{3}\pi R_E^3}$$

$$= \frac{\frac{4}{3}\pi R_M^3}{\frac{4}{3}\pi (4R_M)^3} = \frac{1}{64}\frac{R_M^3}{R_M^3}$$

$$\frac{V_M}{V_E} = \frac{1}{64}$$

$$\Rightarrow\ V_M = \frac{1}{64}V_E$$

i.e., volume of moon is $\frac{1}{64}$ of the volume of earth.

15. Inner radius of the hemispherical tank (r) **=** 1 m
    Outer radius of the hemispherical tank (R) = 1 + 0.01 = 1.01 m
    Volume of iron used to make the hemispherical tank $= \frac{2}{3}\pi R^3 - \frac{2}{3}\pi r^3$

$$= \frac{2}{3}\pi (R^3 - r^3) = \frac{2}{3}\times\frac{22}{7}[(1.01)^3 - 1^3]$$

$$= \frac{44}{21}(1.0303 - 1) = \frac{44}{21}\times 0.0303 = 0.06349\,m^3$$

16. Radius of the spherical balloon = $r_1$ = 7 cm
    Surface area $S_1$ of the balloon $= 4\pi r_1^2$

$$= 4\times\frac{22}{7}\times 7^2 = 616\,cm^2$$

Radius of the spherical balloon when air is pumped into it = $r_2$ = 14 cm

Surface area$S_2$ of the balloon $= 4\pi r_2^2 = 4\times\frac{22}{7}\times 14^2$

$$\frac{S_1}{S_2} = \frac{4\times\frac{22}{7}\times 7^2}{4\times\frac{22}{7}\times 14^2} = \frac{1}{4}$$

$$\therefore S_1 : S_2 = 1:4$$

17. We have

$$\sum_{i=1}^{n}(x_1 - 50) = -10 \text{ and } \sum_{i=1}^{n}(x_i - 46) = 70$$

$$\sum_{i=1}^{n} x_i - 50 = 10 \qquad \text{………………. (i)}$$

and $\sum_{i=1}^{n} x_i - 46n = 70$ …………………… (ii)

subtracting (ii) from (i), we get -4n = -80

n = 20

putting n = 20 in (i), we get

$$\sum_{i=1}^{n} (x_i - 50 \times 20) = -10$$

$$\sum_{i=1}^{n} x_i = 990$$

Therefore, mean = $\frac{1}{n}\left[\sum_{i=1}^{n} x_i\right] = \frac{990}{20}$

=49.5

Hence, n = 20 and mean = 49.5

18. (i) P(no defective part) $= \frac{50}{200} = 0.25$

(ii) P (at least one defective part) = 1 –P (no defective part) = 1 – 0.25 = 0.75

(iii) P (not more than 5 defective parts) = P (no defective part) + P (1 defective part)+ P (2 defective parts) + P (3 defective parts) + P (4 defective parts) + P (5 defective parts)

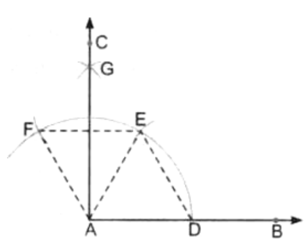
$$= \frac{50}{200} + \frac{32}{200} + \frac{22}{200} + \frac{18}{200} + \frac{12}{200} + \frac{12}{200}$$

$$= \frac{146}{200} = 0.73$$

## SECTION-D

Question numbers **19** to 28 carry **four** marks each.

19.




**Steps of Construction**

(i) Draw a ray AB.

(ii) Taking A as centre and some convenient radius draw an arc which intersect AB, say at point D.

(iii) Taking D as centre and with the same radius as before draw an arc intersecting the previously drawn arc, say at point E.

(iv) Taking E as centre and with the same radius draw an arc intersecting the drawn arc, say at point F.

(v) With E and F as centers, and some convenient radius (more than $\frac{1}{2}$ EF), draw two arcs intersecting each other at G.

(vi) Draw ray AC passing through G. Then $\angle CAB$ is the required angle of $90°$.

**Justification**

By construction AD = DE = EA

$\Delta EAD$ is an equilateral triangle. So $\angle EAD = 60°$

Again AE = EF = FA.

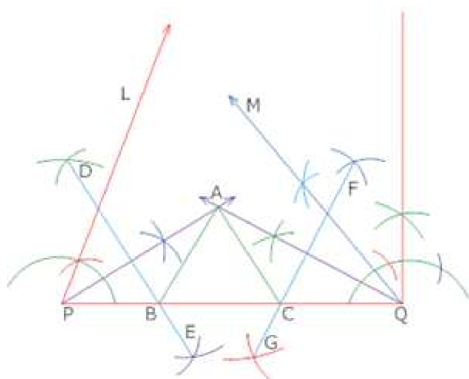
$\therefore \Delta FAE$ is an equilateral triangle. So $\angle FAE = 60°$

As AG bisects $\angle FAE$, So $\angle GAE = 30°$

Now, $\angle CAB = \angle GAE + \angle EAD$

$= 30° + 60° = 90°$

20.




**Steps of construction**

(1) Draw a line segment $PQ = 11cm (= AB + BC + CA)$

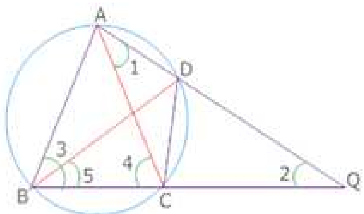
(2) At P construct an angle of $60°$ and at Q an angle of $45°$

(3) Bisects these angles let bisectors of these intersect at point A

(4) Draw perpendicular bisectors DE of AP to intersect PQ at B and FG of AQ to intersect PQ at C.

(5) Join AB and AC Then ABC is required triangle.

21. Join P and C




Considered $\Delta ACQ$

$\angle 4 = \angle 1 + \angle 2 ............(i)$ [Exterior angle is equal to the sum of two interior opposite angles]

$\angle 4 = \angle 3 ...........(ii)$

From (i) and (ii)

$\angle 1 + \angle 2 = \angle 3$

$\angle 3 = 2\angle 5$ [BP is bisector of $\angle 3$]

$\angle 1 + \angle 2 = 2\angle 5$

$\angle 1 + \angle 2 = \angle 5 + \angle 5$

$\angle 5 = \angle 1$ [Angle in the same segments]

$\angle 1 + \angle 2 = \angle 1 + \angle 1$

$\angle 2 = \angle 1$

In $\Delta ACQ$, $CQ = CA$ (sides opposite to equal angles)

22. Given dimensions of bigger box

$= 25cm \times 20cm \times 5cm$

Total surface area of bigger box

$= 2[25\times 20 + 20\times 5 + 25\times 5]cm^2$

$= 2[500 + 100 + 125]cm^2 = 2\times 725 = 1450cm^2$

Extra cardboard for packing = 5% of $1450cm^2$

$= \frac{5}{100}\times 1450 = 72.5cm^2$

Cardboard used for making box $= 1450 + 72.5 = 1522.5cm^2$

Dimensions of smaller box $= 15cm\times 12cm\times 5cm$

Total surface area of smaller box $= 2[15\times 12 + 12\times 15 + 15\times 5]cm^2$

$= 2[180 + 60 + 75]cm^2$

$= 2\times 315cm^2 = 630cm^2$

Extra cardboard for packing $= 5\%$ of 630

$= \frac{5}{100} 630 = 31.5cm^2$

Total area of cardboard = $630 + 31.5 = 661.5cm^2$

Total cardboard used for making 2 boxes

$= (1522.5 + 661.5)cm^2 = 2184cm^2$

Cardboard used for making 250 boxes $=250\times 2184=546000cm^2$

Cost of cardboard= $\frac{4}{1000}\times 546\,000 = Rs.2184$

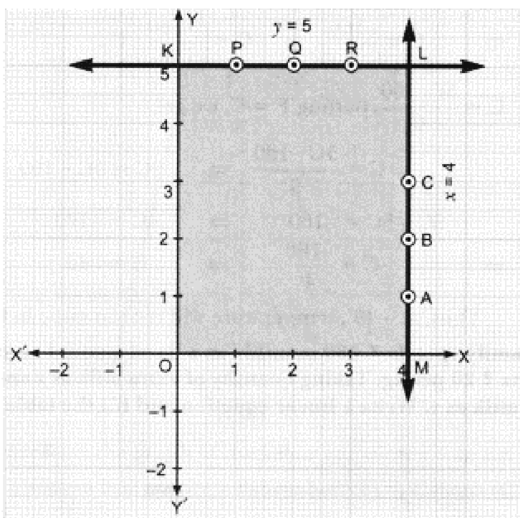
23. x = 4 and y = 5

x = 4 in two variables is x + 0 y = 4

| | | | |
|---|---|---|---|
| x | 4 | 4 | 4 |
| y | 1 | 2 | 3 |
| | A | B | C |

y = 5 in two variables in 0x + y = 5

| | | | |
|---|---|---|---|
| x | 1 | 2 | 3 |
| y | 5 | 5 | 5 |
| | P | Q | R |




∴ Required area is OKLM with x = 4, y = 5 and both the axes.

The enclosed figure, i.e., OKLM is rectangle having length OM = 4 units and breadth OK = 5 units.

∴ Area of rectangle/enclosed figure will be = L × B = 4 × 5 = 20 sq. units

24. External diameter of the spherical shell= 10cm

∴External radius $R=5cm$

Internal diameter =9cm

Internal radius = $\frac{9}{2}cm$

$r=\frac{9}{2}cm$

(i) Volume of the metal $=\frac{4}{3}\pi\left[R^3-r^3\right]cm^3$

$$=\frac{4}{3}\pi\left[5^3-\left(\frac{9}{2}\right)^3\right]cm^3$$

$$=\frac{4}{3}\times\frac{22}{7}\left[125-\frac{729}{8}\right]cm^3$$

$$=\frac{88}{21}\times\frac{271}{8}cm^3=141.95cm^3$$

(ii) Weight of the shell = Volume $\times$density

$$=141.95cm^3\times 9.6gm/cm^3$$

$$=1363gm$$

$$=1.363kg$$

(iii) Outer surface area $=4\pi r^2$

$$=4\pi(5)^2$$

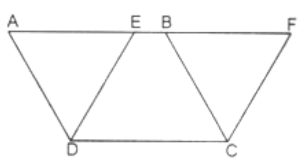
$$=4\times\frac{22}{7}\times 25$$

$$=\frac{2200}{7}=314.389cm^2$$

25. **Given:** Two parallelograms ABCD and EFCD on the same base DC and between the same parallel lines AF and DC.

**To prove:** $ar\left(||^{gm}\ ABCD\right)=ar\left(||^{gm}\ EFCD\right)$

**Proof:** In $\Delta ADE$ and $\Delta BCF$




$\angle DAE=\angle CBF$ (Corresponding angles from $AD\,||\,BC$ and transversal AF)

$\angle AED=\angle BFC$ (Corresponding angles from $ED\,||\,FC$ and transversal AF)

Therefore, $\angle ADE=\angle BCF$

Also, AD = BC (Opposite sides of the parallelogram ABCD)

So, $\Delta ADE\cong\Delta BCF$ (By ASA congruence criterion)

As congruent triangles have equal areas

$ar(\Delta ADE)=ar(\Delta BCF)$ ... (i)

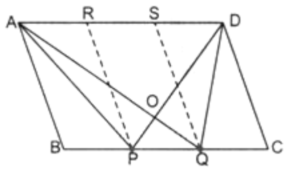
Now, $ar\left(||^{gm}\ ABCD\right)=ar(\Delta ADE)+ar(quad.EDCB)$

$ar(\Delta BCF)+ar(quad.EDCB)$ [using (i)]

$=ar\left(||^{gm}\ EFCD\right)$

So, parallelograms ABCD and EFCD are equal in area.

26. Through P and g, draw PR and QS parallel to AB. Now, PQSR is a parallelogram and its base $PQ = \frac{1}{3} BC$.




Since $\Delta APQ$ and $\Delta DPQ$ are on the same base PQ, and between the same parallels AD and BC.

$ar(\Delta APQ) = ar(\Delta DPQ)$ .................. (i)

Since $\Delta APQ$ and parallelogram PQRS are on the same base PQ, and between the same parallels PQ and AC.

$\therefore ar(\Delta APQ) = \frac{1}{2}(||^{gm}\ PQRS)$ ................ (ii)

Now, $\frac{(||^{gm}\ ABCD)}{(||^{gm}\ PQRS)} = \frac{BC \times height}{PQ \times height}$

$= \frac{3PQ}{PQ}$ ($\therefore$ height of the two parallelogram is same)

$ar(||^{gm}\ PQRS) = \frac{1}{3} ar(||^{gm}\ ABCD)$

Using equation (ii) and (iii), we have

$ar(\Delta APQ) = \frac{1}{2} ar(||^{gm}\ PQRS) = \frac{1}{2} \times \frac{1}{3} ar(||^{gm}\ ABCD)$

Hence, $ar(\Delta APQ) = ar(\Delta DPQ) = \frac{1}{6} ar(||^{gm}\ ABCD)$ [Using (i)]

27. Since the given frequency distribution is the frequency distribution of 50 students. Therefore, g = 50

From the table, we have

a = 12,

b + 12 = 25,

12 + b + 10 = c,

12 + b + 10 + d = 43,

12 + b + 10 + d + e = 48

and 12 + b + 10 + d + e + g = f

Now, b + 12 = 25

b = 13

12 + b + 10 = c $\Rightarrow$ 12 + 13 + 10 = c [$\because$ b = 13]

c = 35

12 + b + 10 + d = 43 $\Rightarrow$ 12 + 13 + 10 + d = 43 [$\because$ b = 13]

d = 8

12 + b + 10 + d + e = 48 $\Rightarrow$ 12 + 13 + 10 + 8 + e =48 [$\because$ b=13, d= 8]

e = 5

and 12 + b + 10 + d + e + 2 = f

12 + 13 + 10 + 8 + 5 + 2 = f

f = 50

Hence, a = 12, b = 13, c = 35, d = 8, e = 5, f = 50

28. (i) P (earning Rs. 10000 – 13000 per month and owning exactly 2 vehicles) = $\frac{29}{2400}$

(ii) P (earning Rs. 16000 or more per month and owning exactly 1 vehicles) = $\frac{579}{2400}$

(iii) P (earning Rs. 7000 per month and does not own any vehicles) = $\frac{10}{2400} = \frac{1}{240}$

(iv) P (earning Rs. 13000 – 16000 per month and owning more than 2 vehicles) = $\frac{25}{2400} = \frac{1}{96}$

(v) P (owning not more than 1 vehicle) = $\frac{2062}{2400} = \frac{1031}{1200}$