**14**

# SUMMATIVE ASSESSMENT – I (2017-18)

**D**

## MATHEMATICS – Paper – II

**(English Medium)**

**Class : IX** | **No. of Questions : 80**

**Max. Marks : 80** | **Time : 2.45 Hrs.**

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**INSTRUCTIONS :**

1. *The question paper is given as Booklet.*
2. *All the questions are multiple choice questions.*
3. *Use Blue / Black ink ball point pen to answer all the questions in OMR sheet.*
4. *Identify the correct answer and bubble relevant circle given against the question number in OMR Sheet.*

   *Ex : If the answer is 3 to the question bubble as shown* ①②●④.
5. *The answer Paper is not valued if ✓, × symbols used as answers.*
6. *The answer paper is not valued for over-writing and more than one answer is bubbled.*
7. *Answer all the questions in the given time and hand over the OMR sheet to the invigilator.*

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Read the following information and answer the questions from **1-5**

**Marks of students of a class were given**

| Classes | Talley Marks | Frequency |
|---|---|---|
| 10 – 15 | 𝍸 | 5 |
| 15 – 20 | 𝍸 \|\|\|\| | 9 |
| 20 – 25 | 𝍸 𝍸 \| | 11 |
| 25 – 30 | \|\|\| | 3 |
| 30 35 | \|\| | 2 |

1. From the given table the lower limit of highest frequency class
   (1) 30 (2) 15
   (3) 20 (4) 25

2. In the class no. of students more than 25 marks obtained is
   (1) 30 (2) 5
   (3) 14 (4) 25

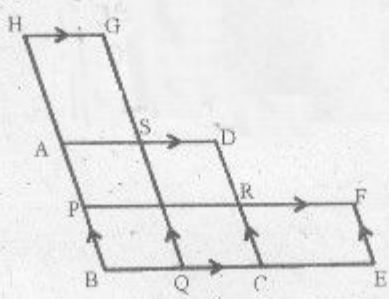
3. If three students with marks 26, 27 and 28 were joined, which class frequency changes ?
   (1) 30-35 (2) 10-15
   (3) 20-25 (4) 25-30

4. In the given data '𝍸' represents
   (1) 20 (2) 10
   (3) 15 (4) 5

5. While drawing a bar graph, which class bar is the smallest in it's length ?
   (1) 15-20 (2) 10-15
   (3) 25-30 (4) 30-35

6. While writing the expansion form of 5161 we use some digits. Mode of the digits used in the expansion is
   (1) 0 (2) 6
   (3) 5 (4) 1

7. In the given diagram □ ABCD is the parallelogram with sides 3 cm and 2 cm. □ BEFP is also a parallelogram with sides 6 cm. and 1 cm. □ BQGH is another parallelogram with 4 cm. and 1.5 cm.
   Which of these is more in area ?




   (1) All are equal in areas. (2) □ ABCD
   (3) □ BEFP (4) □ BQGH

8. Which of these is a postulate ?

(1) A.A.A. (2) A.S.A.

(3) S.S.S. (4) S.A.S.

9. A designer wanted to make a design with Iron rod. He has a rod of length 68 cm. He can do a rhombus of diagonals 16 cm, 30 cm and also a square. Which is a better option to cover more area with the given length ?

(1) Always both square & Rhombus

(2) Square only

(3) Rhombus only

(4) Sometimes square and sometimes rhombus

10. Given below are the marks obtained in a Mathematics examination of class IX :

| **Marks who got** | Less than 25 | Less than 50 | Less than 75 | Less than 100 |
|---|---|---|---|---|
| **No. of Students** | 15 | 24 | 42 | 50 |

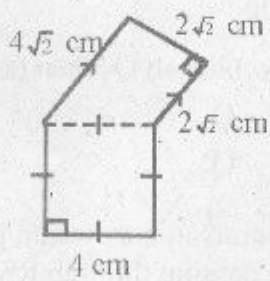
The above data was classified as 0-25, 25-50, 50-75, 75-100.

In which class the frequency is more ?

(1) 75-100 (2) 0-25

(3) 25-50 (4) 50-75

11. Area of the given figure is




(1) 32 $cm^2$ (2) 12 $cm^2$

(3) 16 $cm^2$ (4) 28 $cm^2$

12. Teacher asked her students to measure the lengths of sides of school garden which is in a triangular shape.

Sudha measured as 50 mts, 45 mts and 20 mts

Kiran measured as 40 mts, 20 mts and 60 mts

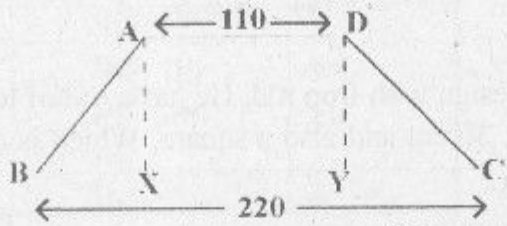
Radha measured as 45 mts, 20 mts and 50 mts

John measured as 40 mts, 20 mts and 65 mts

(1) Kiran and Radha (2) Sudha and Radha

(3) Kiran and John (4) Sudha and John

13. □ ABCD as shown in the figure is a field of a farmer. He sold ΔABX and ΔDCY to tally for ₹ 1.5 lakh in order to make it as a rectangular field AXYD. If he sells his total field, he might have get




(1) ₹ 6 lakh (2) ₹ 1.5 lakh
(3) ₹ 3 lakh (4) ₹ 45 lakh

14. In an ungrouped data there are 10 scores. After arranging them which term is the median ?
(1) Average of $\frac{n^{th}}{2}$ term and $\left(\frac{n}{2}+1\right)^{th}$ term
(2) $\frac{n^{th}}{2}$ term
(3) $\left(\frac{n}{2}+1\right)^{th}$ term
(4) $\left(\frac{n+1}{2}\right)^{th}$ term

15. If the perimeters of a square and rectangle are equal, then
(1) Both the areas are equal.
(2) Area of square is more than area of rectangle.
(3) Area of rectangle is more than area of square.
(4) Area of square is less than area of rectangle.

16. If the point $(x_1, y_1)$ lies in $Q_2$ and the point $(x_2, y_2)$ lies in $Q_3$ then $(x_1, y_2)$ lies in
(1) $Q_4$ (2) $Q_1$
(3) $Q_2$ (4) $Q_3$

17. P (5, 0), Q (– 6, 0), R (0, – 6), S (0, 4) are the points in a cartesian plane. If 'T' is a point on the line passing through PQ and also on the line passing through RS then T =
(1) (–6, 4) (2) (5, 6)
(3) (– 6, – 6) (4) (0, 0)

18. (4, 0), (–3, 0), (3, 4), (0, 4) which of these is nearer to the origin ?
(1) (–3, 0) (2) (4, 0)
(3) (3, 4) (4) (0, 4)

19. If a point is at a distance of 3 units from $x$-axis and 5 units from y-axis, then the points satisfies the condition in $Q_1, Q_2, Q_3, Q_4$ are
(1) (3, 5), (3, –5), (–3, 5), (–3, –5) (2) (5, 3), (–5, 3), (–5, –3), (5, –3)
(3) (3, 5), (–3, 5), (–3, –5), (3, –5) (4) (5, 3), (–5, –3), (–5, 3), (5, –3)

20. Which of the following is not related ?
(1) (–6, 3) (2) (–1, 2)
(3) (2, –1) (4) (–3, 1)

21. One of the solution for a point in quadrant 2.

(1) $(2, -3)$

(2) $(-2, 3)$

(3) $(-2, -3)$

(4) $(2, 3)$

22. Among the following, the point that lies only on $x$-axis is

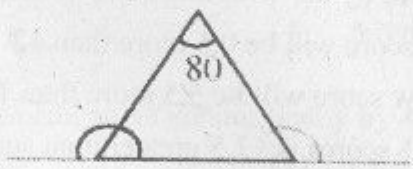
(1) Both $(0, 0)$ & $(0, 4)$

(2) $(0, 0)$

(3) $(0, 4)$

(4) $(4, 0)$

23. If the ratio of two interior angles in a triangle is 2 : 3, then the ratio of their corresponding exterior angles if the vertical angle is $80°$.



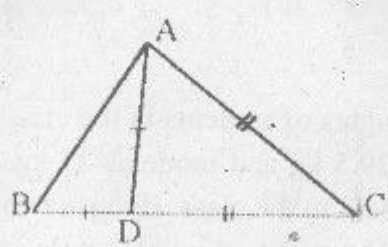

(1) 6 : 7

(2) 9 : 2

(3) 8 : 4

(4) 7 : 6

24. In the given diagram BD = AD and AC = CD, then $\angle CAB : \angle ABD$




(1) 3 : 1

(2) 1 : 3

(3) 1 : 4

(4) 4 : 1

25. In a parallelogram, if one set of opposite angles are complementary, then the biggest angle in it is

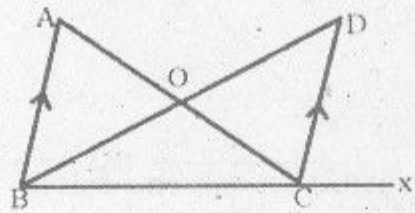
(1) $270°$

(2) $45°$

(3) $90°$

(4) $135°$

26. In the given figure AB $\parallel$ CD, AB = CD. $\overline{AC}$ and $\overline{BD}$ intersects at O. From the given information which of these is false ?




(1) $\Delta ABC \cong \Delta BDC$

(2) $\angle OBA = \angle ODC$

(3) $\Delta OAB \cong \Delta OCD$

(4) 'O' is the bisecting point of $\overline{AC}$, $\overline{BD}$

27. For an ungrouped data of 10 scores Arithmetic mean is 12. If one more score is joined to the previous scores the mean increases by 0.5 with this information.

Ravi : Ravi says that the new score will be 0.5 more than 12.

Harsha : Harsha says that the new score will be 5.5 more than 12.

Ritu : Ritu says that sum of 11 scores is 17.5 greater than sum of 10 scores.

Now, which of these is correct ?

(1) All are correct.

(2) Ravi and Harsha are correct.

(3) Harsha and Ritu are correct.

(4) Ravi and Ritu are correct.

28. While doing a project work on weights of students in the class-room Sekhar found mean wt of the class as 28 kg, median as 29.5 kg and mode as 27 kg. While doing his project two students Eswar & Nawaz were absent in the class. If those two were attended mean, median and mode will not change. Then the possible wt's of these two students are (in kgs)

(1) 27, 29 (2) 28, 28

(3) 27.5, 28.5 (4) 20, 36

29. In $\Delta$ ABC, D, E are the mid points of AB, AC. F, G are the mid-points of $\overline{AD}$, $\overline{AE}$. If $\overline{FG}$ = 2 cm, then BC =

(1) 10 cm (2) 4 cm

(3) 6 cm (4) 8 cm

30. $\Delta$ PQR is an equilateral triangle. X, Y, Z are the mid-points of the sides and A, B, C are the mid-points of sides of $\Delta$XYZ. If the perimeter of $\Delta$PQR is 8.4 cm, then the perimeter of $\Delta$ABC =

(1) 4.2 cm (2) 8.4 cm

(3) 2.1 cm (4) 2.8 cm

Read the information given below and answer the questions from **31** to **35**.

Ram plotted points like these :

A (0, –4), B(0, 6), C (3, 4), D (3, –4), E (3, 7), F (7, 3), G (– 3, 4), H (6, 0), I(– 6, 0)

31. From the given information the point on positive y-axis is

(1) I (2) A

(3) B (4) H

32. The distance between G and D is

(1) 6 units (2) 0 units

(3) 4 units (4) 8 units

33. The point for which $x$ co-ordinate is greater than y by 4 is

(1) D (2) C

(3) E (4) F

34. The distance from y-axis to the point G is

(1) –4 (2) –3

(3) 3 (4) 4

35. If $(x, y) = (7, 3)$, then $(x + y, x - y)$ lies in

(1) $Q_4$ (2) $Q_1$

(3) $Q_2$ (4) $Q_3$

Read the given data and answer the questions from **36** to **40** :

| Description | Sides (in cm) | | | Angles | | |
|---|---|---|---|---|---|---|
| | Side-1 | Side-2 | Side-3 | Angle-1 | Angle-2 | Angle-3 |
| $\Delta$ ABC | AB = 6.7 | BC = 5.4 | AC = 3.5 | ---- | $\angle B = 30°$ | $\angle C = 100°$ |
| $\Delta$ XYZ | XY = 7 | YZ = 13 | ZX = 12 | ---- | ---- | ---- |
| $\Delta$ PQR | ---- | QR = 5.4 | ---- | $\angle P = 50°$ | $\angle Q = 30°$ | ---- |

36. From the data given, in $\Delta$PQR, PQ + PR = _____ cm.

(1) 25 (2) 19

(3) 9.4 (4) 10.4

37. The exterior angle at R in $\Delta PQR$ is

(1) $120^\circ$ (2) $60^\circ$

(3) $80^\circ$ (4) $100^\circ$

38. Which are congruent in the given triangles ?

(1) None of these (2) $\Delta ABC \cong \Delta XYZ$

(3) $\Delta XYZ \cong \Delta PQR$ (4) $\Delta ABC \cong \Delta PQR$

39. In $\Delta XYZ$ the biggest angle is at which vertex ?

(1) X + Y + Z (2) X

(3) Y (4) Z

40. $\Delta ABC \cong \Delta PQR$ under which congruency criterion ?

(1) A.A.A. (2) S.S.S.

(3) S.A.S. (4) A.S.A.

Read the following information and answer the question from **41** to **45**.

| Sl.No. | Name of Quadrilateral | Properties |
|---|---|---|
| 1. | □ ABCD | Only one set of opposite sides are parallel. |
| 2. | □ PQRS | Diagonals bisects at each other. |
| 3. | □ KLMN | All the sides and angles are equal. |

41. In □ ABCD if BC ∥ AD, and $\overline{BD}$ is a transversal, $\angle ADB = 100^\circ - 4x^\circ$, $\angle CBD = 180^\circ - 5x^\circ$ then $x^\circ =$ _____

(1) $270^\circ$ (2) $80^\circ$

(3) $100^\circ$ (4) $180^\circ$

42. In □ KLMN, KM is the diagonal, then $\angle KML =$ _____

(1) $180^\circ$ (2) $45^\circ$

(3) $90^\circ$ (4) $135^\circ$

43. In □ PQRS, $\overrightarrow{PX}$ and $\overrightarrow{QY}$ are the angle bisectors at $\angle P$, $\angle Q$ which meets at O, then $\angle POQ =$

(1) $180^\circ$ (2) $45^\circ$

(3) $90^\circ$ (4) $135^\circ$

44. Which of following is not correct ?

(1) In □ KLMN diagonals are equal

(2) All the properties of □ PQRS hold good for □ KLMN

(3) All the angles are equal in □ PQRS

(4) All the properties of □ KLMN hold good for □ PQRS

45. In □ ABCD if $\overline{AB} \parallel \overline{CD}$, then $\angle A$ and $\angle D$ are

(1) Linear pair to each other

(2) Complementary to each other

(3) Supplementary to each other

(4) Conjugate angles to each other

Read the following and answer questions **46** to **50** :

Data given of marks obtained by the students in an examination.

| Marks obtained | No. of Students |
|---|---|
| Upto 5 | 5 |
| Upto 10 | 11 |
| Upto 15 | 19 |
| Upto 20 | 25 |

46. No. of students who got more than 15 marks :

(1) 6 (2) 25

(3) 19 (4) 11

47. If 6 students were failed, then the no. of students who passed and got upto 15 marks are

(1) 13 (2) 5

(3) 6 (4) 11

48. No. of students who are in the class of 10-15 is

(1) 20 (2) 0

(3) 8 (4) 14

49. If 5 more students are joined with marks 12, 15, 8, 19, 6 in the class, then the no. of students who got more than 15 marks are

(1) 7 (2) 10

(3) 9 (4) 8

50. In 10-15 class 10 is called as

(1) Upper boundary of 10-15 class

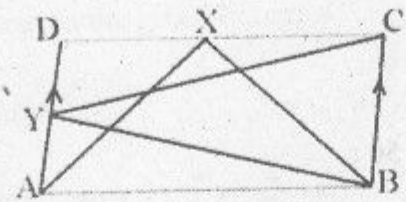
(2) Lower limit of 10-15 class

(3) Upper limit of 10-15 class

(4) Lower boundary of 10-15 class

Read the following information and answer **51-55.**

In the parallelogram ABCD, X, Y are the mid points of $\overline{CD}$, $\overline{AD}$ respectively. Area of $\square$ ABCD is 64 $cm^2$.




**51.** If AB = 16 cm, then the distance between $\overline{AB}$, $\overline{CD}$ is

(1) 16

(2) 4

(3) 8

(4) 8.5

**52.** Area of $\Delta$ CYD : Area of $\square$ABCD is

(1) 1 : 5 (2) 1 : 2

(3) 1 : 3 (4) 1 : 4

**53.** If X and Y are joined and A and C are joined, then the area of trapezium $\square$ XYAC (in $cm^2$)

(1) 28 (2) 4

(3) 16 (3) 24

**54.** In the given figure which one is wrong ?

(1) Area of $\Delta$BAY = Area of $\Delta$BCX

(2) Area of $\Delta$DAX + Area of $\Delta$BCX = Area of $\Delta$ABX.

(3) Area of $\Delta$BCY $= \frac{1}{2}$Area of $\square$ ABCD

(4) $\Delta DCY \cong \Delta BAY$

**55.** Which of the following are in the same ratio as Area of $\square$ ABXD : Area of $\square$ ABCD ?

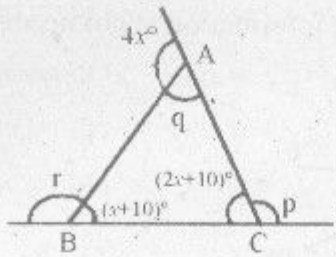
(1) Both Area of $\square$ ABCX : Area of $\square$ ABCD and Area of $\square$ ABCY : Area of $\square$ ABCD.

(2) Area of $\square$ ABCX : Area of $\square$ ABCD

(3) Area of $\square$ ABCY : Area of $\square$ ABCD

(4) Area of $\square$ ABCD : Area of $\square$ BCDY

Read the diagram and answer the questions from **56** to **60** :




**56.** In the given figure (p + r) = _____

(1) 180° (2) 150°

(3) 230° (4) 270°

**57.** If in the given figure ∠p = 130° then the value of $x$ = _____

(1) 60° (2) 20°

(3) 30° (4) 40°

**58.** The value of q is = _____

(1) 120° (2) 80°

(3) 90° (4) 100°

**59.** Which of the following is different ?

(1) $4x° = (x + 10)° + (2x + 10)°$

(2) $4x° + q° = 180°$

(3) $r = (2x + 10)° + q$

(4) $p = (x + 10)° + q$

**60.** In the given triangle is it possible to exist all exterior angles as right angles.

(1) Never possible

(2) Always possible

(3) Sometimes possible

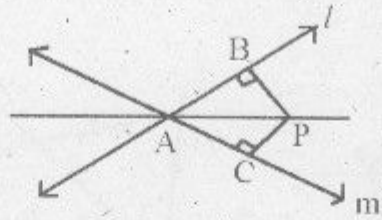
(4) There can be 2 right angles

**61.** Which of these is not related ?

(1) $y = 0$ (2) (0, 4)

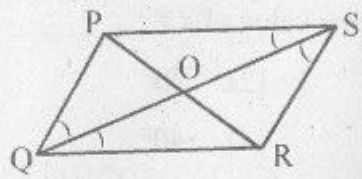
(3) (0, – 6) (4) $x = 0$

62. $l$, m are two lines intersecting at A. P is a point equidistant. To prove $\overline{AP}$ is the bisector of the angle formed by $l$ and m, which of the following information is not needed ?




(1) PB = PC
(2) R.H.S. congruency rule
(3) Vertically opposite angles are equal.
(4) $\overline{AP}$ is a common side.

63. In the given quadrilateral □ PQRS, PR, QS are the diagonals intersecting at 'O'. From the given information which figure are congruent ?




(1) $\Delta ORS \cong \Delta OPS$
(2) $\Delta OPQ \cong \Delta OQR$
(3) $\Delta OQR \cong \Delta ORS$
(4) $\Delta PQS \cong \Delta QRS$

64. To find mean weight of 3 types of vegetables which are 4 kg, 6 kg, 8 kg, Usha and Laxmi do like these :

Usha : Weight given = 4 kg, 6 kg, 8 kg

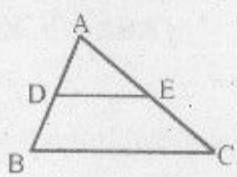
$$\text{Mean weight} = \bar{x} = \frac{3}{18} = \frac{1}{6} \text{ kg}$$

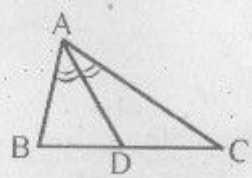
Laxmi : Weight given = 4 kg, 6 kg, 8 kg

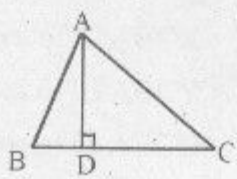
$$\text{Mean weight} = \bar{x} = \frac{4 \times 6 \times 8}{3} = 64 \text{ kg}$$

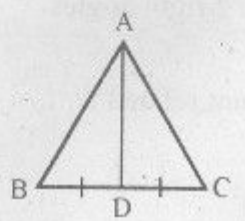
From the above information
(1) Both are wrong.
(2) Usha only wrong.
(3) Laxmi only wrong.
(4) Both are right.

65. "In a triangle median divides the triangle into two triangles whose areas are equal." Rough diagram for the above statement is

(1)



(2)



(3)



(4)


66. If a point P($x$, y) is in $Q_4$ then identify the correct statement among these :

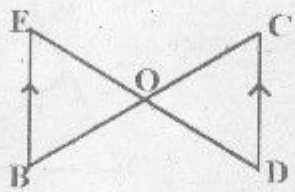
(1) The point ($-x$, $-$y) is also in $Q_4$

(2) The point ($x$, $-$y) is in $Q_2$

(3) The point ($-x$, y) is in $Q_3$

(4) The point ($-x$, $-$y) is in $Q_1$

67. From the given figure, what is the additional information needed to prove $\Delta OBE \cong \Delta OCD$ ?




(1) BE = CD

(2) $\angle BOE = \angle COD$

(3) $\angle OBE = \angle OCD$

(4) BD = CE

68. $\square$ ABCD is a Rhombus prove that the diagonals divides the rhombus into four congruent triangles. (Let the point of intersection is O.) For the above problem what is R.T.P. ?

(1) $\Delta ABC \cong \Delta ACD \cong \Delta ABD \cong \Delta BCD$

(2) $\Delta ABC \cong \Delta ACD$

(3) $\Delta ABD \cong \Delta BCD$

(4) $\Delta OAB \cong \Delta OBC \cong \Delta OCD \cong \Delta OAD$

69. A paper is folded several times. When it was opened it was observed that it contained 22 triangles and 22 quadrilateral and 12 pentagons. From the above mode is

(1) Both triangles and quadrilaterals

(2) Triangles

(3) Quadrilaterals

(4) Pentagons

70. A toy rocket is like a cone exactly mounted on a cylinder the vertical cross-section of the toy is

(1) Hexagon

(2) Parallelogram

(3) Rhombus

(4) Trapezium

71. Which of these points is nearer to y-axis ?

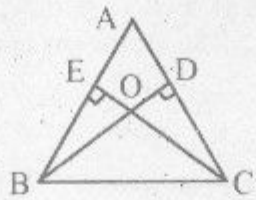
(1) (5, 4)

(2) (4, 5)

(3) (3, 6)

(4) (6, 3)

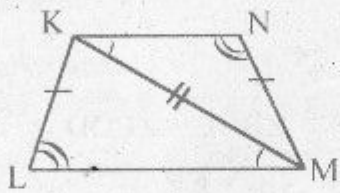
72. From the given figure, what is the additional information needed to prove $\Delta OBE \cong \Delta OCD$ ?




(1) $BE = CD$ (2) $\angle BOE = \angle COD$

(3) $\angle OBE = \angle OCD$ (4) $BD = CE$

73. From the given figure $\Delta KLM \cong \Delta KMN$ (A.S.A. rule) under CPCT ML =




(1) MK (2) KL

(3) MN (4) KN

74. Means of first 10 whole numbers and first 10 natural numbers is in the ratio of

(1) 9 : 11 (2) 10 : 11

(3) 11 : 10 (4) 11 : 9

75. From a rectangular shape of paper if you cut 3 triangles the area of biggest triangle is

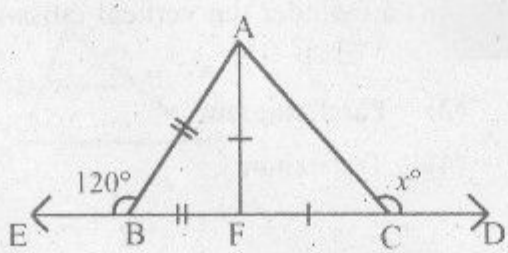
(1) Equal in areas

(2) $\frac{1^{th}}{4}$ area of rectangle

(3) $\frac{1}{2}$ area of rectangle

(4) $\frac{3^{th}}{4}$ area of rectangle

76. From the given figure $x$ =




(1) 150° (2) 60°

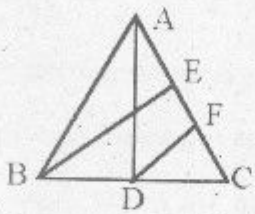
(3) 100° (4) 120°

77. In $\Delta ABC$, $\overline{AD}$, $\overline{BE}$ are medians $\overline{BE} \| \overline{DF}$.

To prove $CF = \frac{1}{4} AC$ it was written as

In $\Delta ABC$ 'D' is the mid-point of $\overline{BC}$ and $BE \| DF$. As per triangle mid-point theorem F is the mid-point of $\overline{CE}$

$\therefore CF = \frac{1}{2} CE$




Which of the following is the next step ?

(1) $CF = \frac{1}{4} AC$ (2) $2CF = CE$

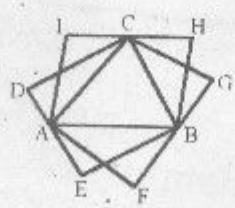
(3) $CF = \frac{1}{2}(\frac{1}{2}AC)$ (4) $4CF = AC$

78. $\bar{X} = A + \frac{\Sigma f_i d_i}{\Sigma f_i}$ is the formula to find mean for an ungrouped data. In this formula letter A represents for

(1) Assumed mean (2) Arithmetic mean

(3) Frequency (4) Deviation value

79. In the given figure □ ABHI, □ BCDE, □ ACGF are parallalograms. Which among these is bigger in area ?




(1) All are equal. (2) □ ABHI

(3) □ BCDE (4) □ ACGF

80. In a rhombus a diagonal divides it into

(1) Two equilateral triangles

(2) Two right angled triangles

(3) Two scalened triangles

(4) Two isosceles triangles