

ಗಣಿತ

ಕ್ರ.ಸಂ.	ಪ್ರಶ್ನೆಯ ಸ್ವರೂಪ	ಅಂಕಗಳು	ಪ್ರಶ್ನೆಗಳು	ಒಟ್ಟು ಅಂಕಗಳು
1	ವಸ್ತುನಿಷ್ಠ	01	04	04
2	ಅತಿ ಕಿರು ಉತ್ತರ - 1 (ಒಂದು ಅಂಕದ ಪ್ರಶ್ನೆಗಳು)	01	04	04
3	ಕಿರು ಉತ್ತರ - 1 (ಎರಡು ಅಂಕಗಳ ಪ್ರಶ್ನೆಗಳು)	02	05	10
4	ದೀರ್ಘ ಉತ್ತರ - 1 (ಮೂರು ಅಂಕಗಳ ಪ್ರಶ್ನೆಗಳು)	03	03	09
5	ದೀರ್ಘ ಉತ್ತರ - 2 (ನಾಲ್ಕು ಅಂಕಗಳ ಪ್ರಶ್ನೆಗಳು)	04	02	08
6	ದೀರ್ಘ ಉತ್ತರ - 3 (ಐದು ಅಂಕಗಳ ಪ್ರಶ್ನೆಗಳು)	05	01	05
	ಒಟ್ಟು	**	19	40

Time: 90 min
Class:8

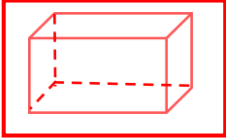
Subject : MATHEMATICS
PRACTICE PAPER
[Regular Fresh]

Code: 81 – E
Marks: 40

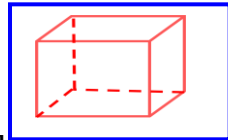
1x 4 = 4

I. Four alternatives are given for the following questions choose the correct answer.

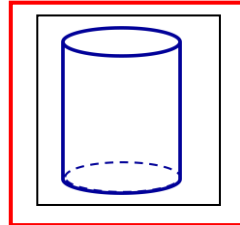
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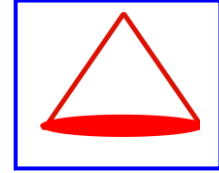
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- a] Pie chart b] bar chart c] Graph d] All

3. An angle which measures more than 180°, but less than 360° is called

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4. A triangle in which two sides are of equal length is called

- a] Isosceles triangle b] Equilateral c] Scalene d] Right angle

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II. Answer the following

5. If one figure sitting exactly on the other then it is called

6. The length of the boundary of any plane figure-----

2x 5 = 10

7. A quadrilateral in which two pairs of sides are parallel is called-----

8. If $3^l \times 3^2 \times 3^5$, then the value of l is

III. Answer the following:

9. Fix up your own coordinate system on a graph paper

and the locate the following points

[i] P (-3, 5) [ii] P (-3, -3) [iii] P (3, 5) [iv] (3, 3)

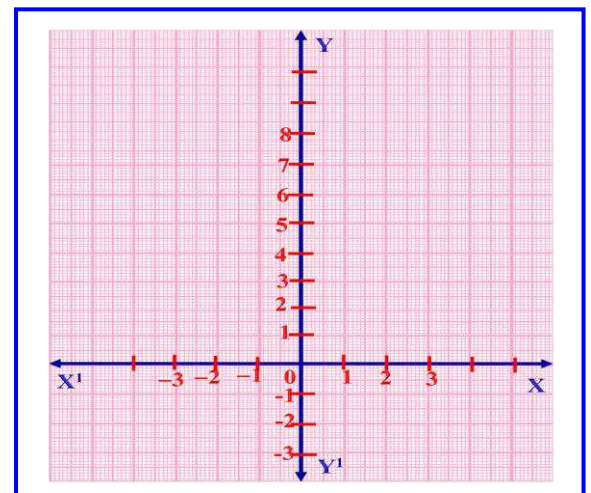
10. Write the laws of exponents.

11. In a triangle ABC, it is given that

$\angle B = 105^\circ$ and $\angle C = 50^\circ$ Find $\angle A$.

12. In a quadrilateral ACBD, AC = AD and AB bisect that

$\angle A$. Show that ΔABC is congruent to ΔABD

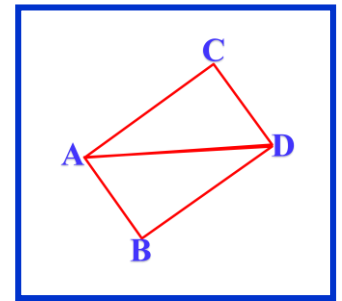
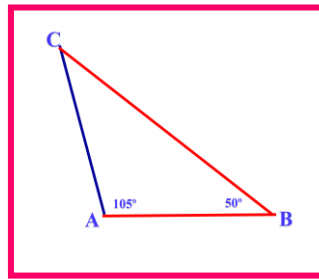


13. Construct a triangle ABC in which AB = 5cm,

BC = 4.3cm and AC = 4cm. **OR**

13. In a quadrilateral ABCD, $\angle A$ and $\angle C$ are of equal measure
 $\angle B$ is supplementary to $\angle D$.

Find the measure of $\angle A$ and $\angle C$.



IV. ANSWER THE FOLLOWING:

$$3 \times 3 = 9$$

14. A tape recorder is sold at ₹ 5,225 after being given a discount of 5% . What is its marked price ?

15. Prove that “ In a triangle, the angles opposite to equal sides are equal”

16. Construct a rectangle given that a diagonal is 3.4 cm and one side is 2.8cm. **OR**

16. Prove that “ The sum of the angles of quadrilateral is 360° ”

V. ANSWER THE FOLLOWING:

$$4 \times 2 = 8$$

17. Construct an isosceles triangle ABC in which base BC = 5.8cm and altitude from A
On BC is 4.8cm

18. Calculate the interest on ₹ 800 at $6\frac{1}{2}\%$ per annum, for $3\frac{1}{2}$ years.

VI ANSWER THE FOLLOWING : .

19. Draw the graph of $y = 3x + 5$ **OR**

$$5 \times 1 = 5$$

19. Calculate the Median:

C - I	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
frequency	11	13	13	9	4

KEY ANSWERS:

1	2	3	4	5	6	7	8
A	A	A	A	superpose	perimeter	parallelogram	3

9. Fix up your own coordinate system on a graph paper

and locate the following points

[i] P (-3, 5) [ii] P (-3, -3)

[iii] P (3, 5) [iv] (3, 3)

10. Write the laws of exponents.

[a] $a^m = a^n = a^{m+n}$ [b] $(a^m)^n = a^{mn}$ [c] $(ab)^m = a^m \times b^m$

[d] $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$

11. In a triangle ABC, it is given that $\angle B = 105^\circ$ and $\angle C = 50^\circ$

Find $\angle A$.

Solution: $\angle A + \angle B + \angle C = 180^\circ$

$\Rightarrow \angle A + 105^\circ + 50^\circ = 180^\circ$

$\Rightarrow \angle A + 155^\circ = 180^\circ$

$\Rightarrow \angle A = 180^\circ - 155^\circ \Rightarrow \angle A = 25^\circ$ Thus $\angle A$ measures 25°

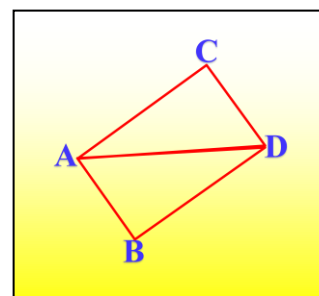
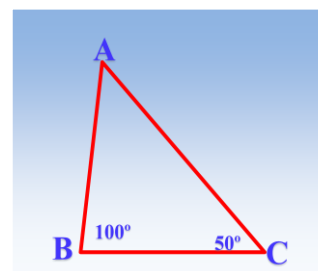
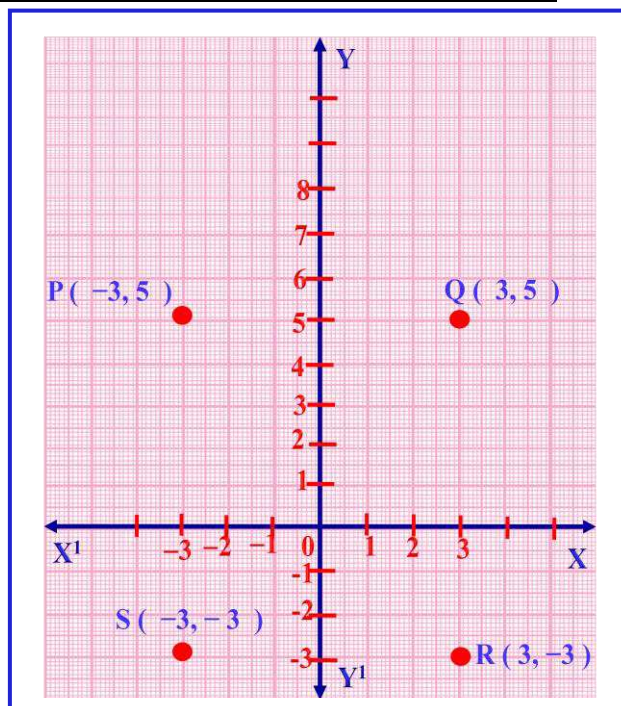
12. In a quadrilateral ACBD, $AC = AD$ and AB bisect that $\angle A$.

Show that $\triangle ABC$ is congruent to $\triangle ABD$

Solution: In triangles ABC and ABD we have $AC = AD$

$\angle CAB = \angle DAB$ (AB bisects $\angle A$)

$AB = AB$ (common side) Hence $\triangle ABC \cong \triangle ABD$



13. Construct a triangle ABC in which $AB = 5\text{cm}$, $BC = 4.3\text{cm}$ and $AC = 4\text{cm}$.

Solution:

1. Draw a line segment which is sufficiently

Long using ruler.

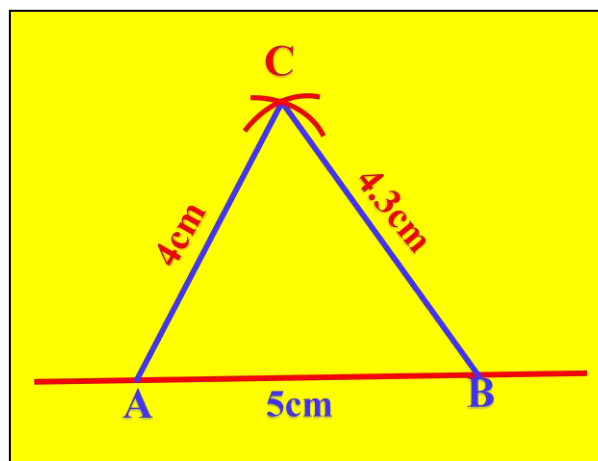
2. Locate points A and B on it such that $AB = 5\text{cm}$.

3. with A as the centre and radius 4 cm,

draw an arc

4. With B as centre and radius 4.3 cm draw

Another arc cutting the previous arc at C.



5 join AC and BC. Then ABC is the required triangle.

13. In a quadrilateral ABCD, $\angle A$ and $\angle C$ are of equal measure $\angle B$ is supplementary to $\angle D$. Find the measure of $\angle A$ and $\angle C$.

Solution: We are given 13. In a quadrilateral ABCD, $\angle A$ and $\angle C$ are of equal measure; $\angle B$ is supplementary to $\angle D$. the measure of $\angle B + \angle D = 180^\circ$. Using angle sum property of a quadrilateral we get $\angle A + \angle C = 360^\circ - 180^\circ = 180^\circ$. Since $\angle A$ and $\angle C$ are of equal measure,

We obtain Get $\angle A = \angle C = \frac{180^\circ}{2} = 90^\circ$

14. A tape recorder is sold at ₹ 5,225 after being given a discount of 5% . What is its marked price ?

Solution: We are given that the discount is 5%. This means that for ₹ 100, the discount is ₹ 5.

Therefore, selling price = ₹ 100 – ₹ 5 = ₹ 95.

Thus on a selling price of ₹ 95, the marked price is ₹ 100.

On selling price of ₹ 5,225 the marked price = $\frac{100}{95} \times 5225 = 5500$.

Therefore , marked price of the tape recorder is ₹ 5,500.

15. Prove that “ In a triangle, the angles opposite to equal sides are equal”

Given : A triangle ABC in which $AB = AC$.

To Prove : $\angle C = \angle B$

Construction : Draw the angle bisector of $\angle A$

Let it cut BC at D. Let us compare triangles ABD ACD.

Proof: Statement

$AB = AC$

$AD = AD$

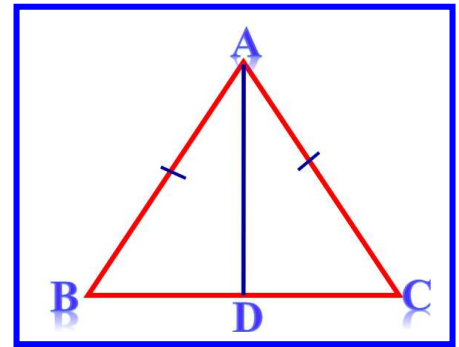
$\angle BAD = \angle CAD$

Reasons

given

common side

by construction.



We can use SAS postulate to conclude that $\triangle ADB \cong \triangle ADC$. Hence $\angle ABC = \angle ACB$, since

These are corresponding angles of congruent triangles . Thus the theorem is proved.

16. . Construct a rectangle given that a diagonal is 3.4 cm and one side is 2.8cm.

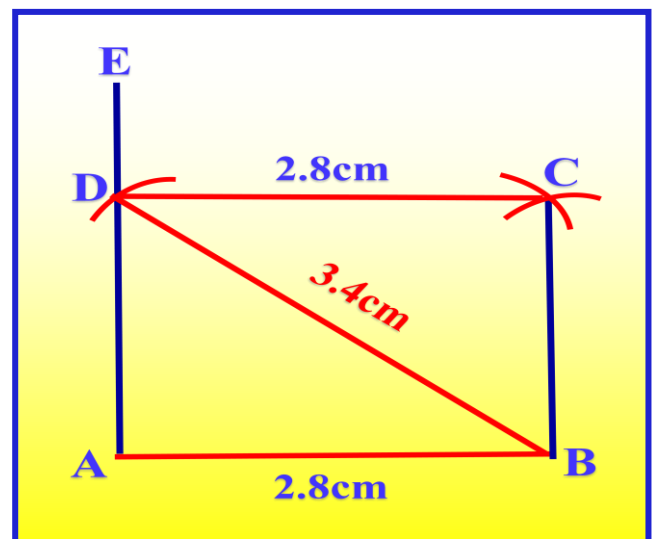
Solution: Given $AB = 2.8\text{cm}$ and $BD = 3.4\text{cm}$

Steps: [1] Draw a line segment $AB = 2.8\text{cm}$.

[2] Construct a perpendicular AE to AB at A .

[3] With B as centre and radius 3.4cm draw an

Arc to cut AE in D .

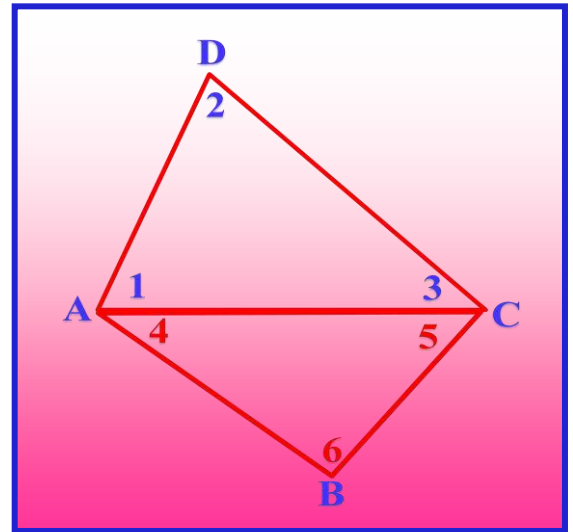


[4] With A as centre and radius 3.4 cm draw an arc.

[5] With D as centre and radius 2.8cm draw an arc so

As to intersect the previous arc in C.

[6] Join DC and BC. You get the rectangle ABCD.



16. Prove that “ The sum of the angles of quadrilateral is 360° ”

Given : ABCD is a quadrilateral.

To prove : $\angle A + \angle B + \angle C + \angle D = 360^\circ$

Construction: Draw the diagonal AC.

Proof: In triangle ADC,

$$\angle 1 + \angle 2 + \angle 3 = 180^\circ \text{ [angle su property]}$$

$$\text{In triangle ABC } \angle 4 + \angle 5 + \angle 6 = 180^\circ$$

[again angle su property] Adding these,

$$\angle 1 + \angle 2 + \angle 3 + \angle 4 + \angle 5 + \angle 6 = 360^\circ$$

But $\angle 1 + \angle 4 = \angle A$ and $\angle 3 + \angle 6 = \angle C$, therefore

$$\angle A + \angle D + \angle B + \angle C = 360^\circ \text{ Thus the sum of the angles of the quadrilateral is } 360^\circ$$

17. Construct an isosceles triangle ABC in which base BC = 5.8cm and altitude from A

On BC is 4.8cm

Solution: Steps of Construction:

1. Draw a line segment BC

Whose length is 5.8cm

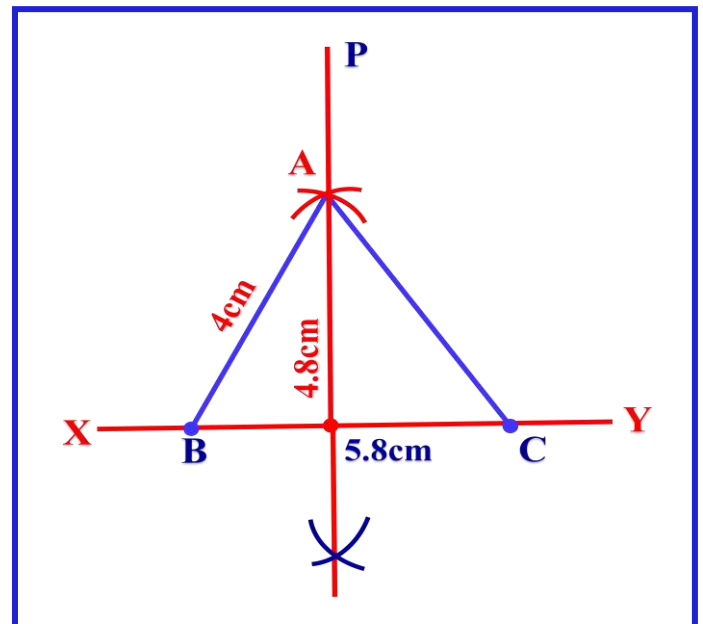
2. Draw the perpendicular bisector of BC

Call it MP, with M on BC.

3. With M as centre and radius 4.8cm

Draw an arc cutting MP at A; join AB and AC.

Then ABC is the required triangle.



18. Calculate the interest on ₹ 800 at $6\frac{1}{2}\%$ per annum,

for $3\frac{1}{2}$ years.

Solution: Given $P = ₹ 800$; $T = 3\frac{1}{2} = \frac{6}{2}$ years; $R = 6\frac{1}{2}\% = \frac{13}{2}\%$. We use the formula for I

$$I = \frac{PTR}{100} =$$

$$\frac{800 \times \frac{6}{2} \times \frac{13}{2}}{100} = 2 \times 7 \times 3 = 182$$

Thus the interest is ₹ 182 .

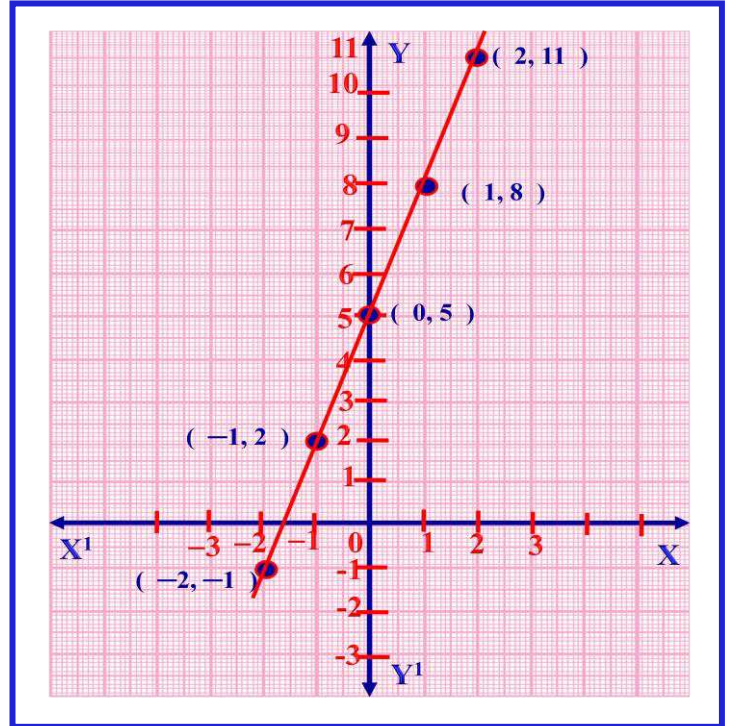
19. Draw the graph of $y = 3x + 5$

Solution: Give different values

for x and get values for y.

Tabulate them.

x	0	1	2	-1	-2
y	5	8	11	2	-1



19. Find Median

C - I	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
frequency	11	13	13	9	4

Solution:

Class Interval	Frequency (f)	Cumulative Frequency (fc)
10 - 20	11	11
20 - 30	13	24
30 - 40	13	37
40 - 50	9	46
50 - 60	4	50

We first prepare the cumulative frequency table total number of observation is $N = 50$. Therefore (30 - 40) is the Median class we also observe that $LRL = 30$, $fc = 24$, $fm = 13$ and $i = 20 - 10 = 10$

Formula for median

$$\text{Median} = LRL + \left(\frac{\frac{N}{2} - fc}{f_m} \right) \times i = 30 + \frac{(25 - 24)}{13} \times 10 = 30 + \frac{10}{13} = 30.77 \text{ approximately.}$$

Time: 90
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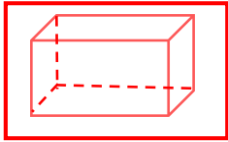
Subject : MATHEMATICS
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Code: 81 – E
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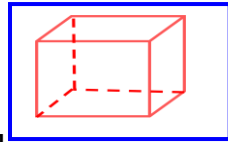
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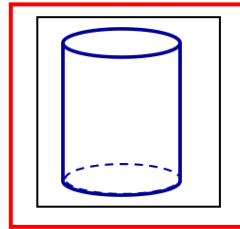
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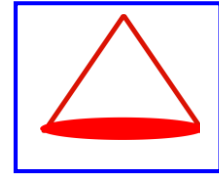
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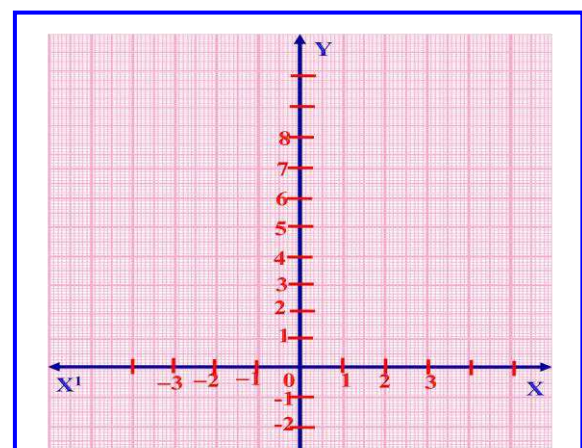
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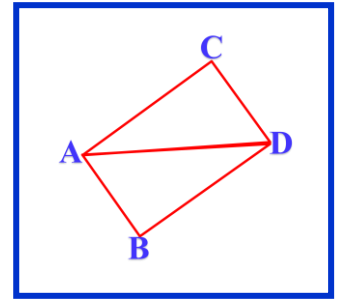
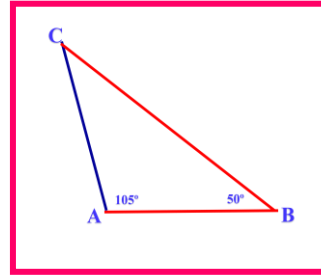
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