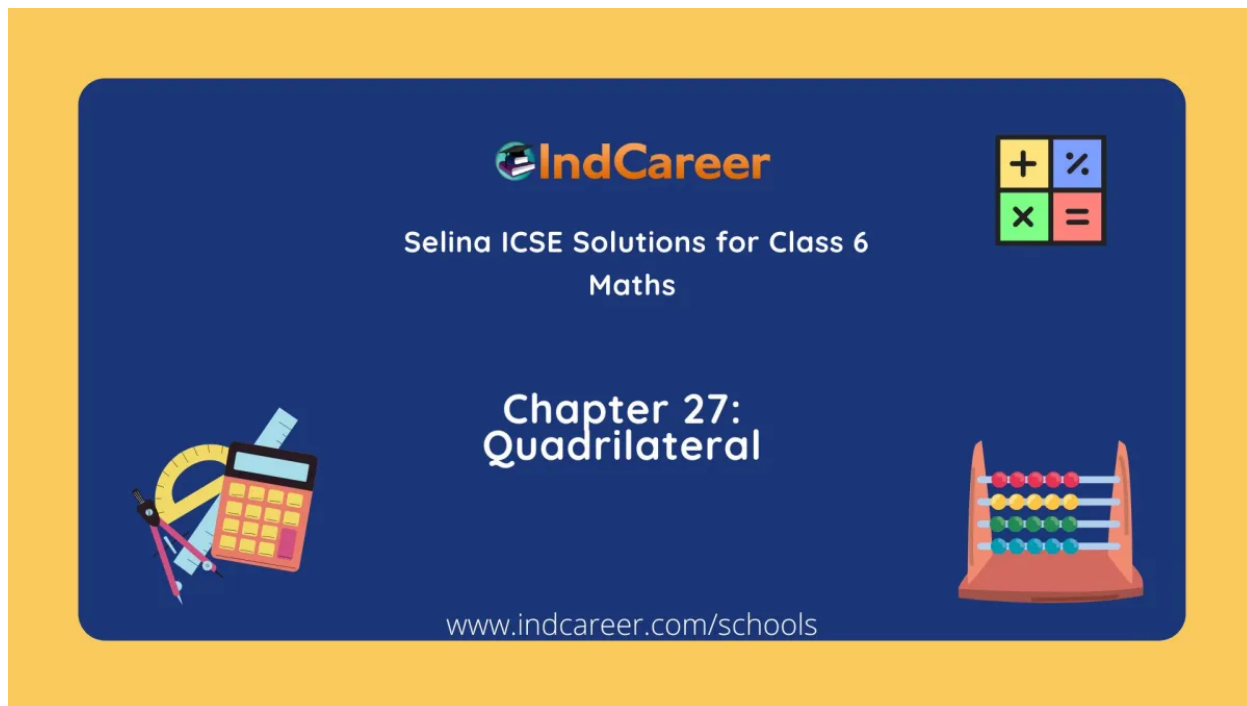


Selina Class 6 ICSE Solutions Mathematics : Chapter 27- Quadrilateral



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Chapter 27- Quadrilateral

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Selina 6th Maths Chapter 27, Class 6 Maths Chapter 27 solutions

Exercise 27(A)

1. Two angles of a quadrilateral are 89° and 113° . If the other two angles are equal; find the equal angles.

Solution:

Let us consider the other angle as x°

As per the question, we have

$$89^\circ + 113^\circ + x^\circ + x^\circ = 360^\circ$$

$$2x^\circ = 360^\circ - 202^\circ$$

$$2x^\circ = 158$$

$$x^\circ = 158 / 2$$

We get,

$$x = 79^\circ$$

Therefore, the other two equal angles are 79° each.

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2. Two angles of a quadrilateral are 68° and 76° . If the other two angles are in the ratio 5:7; find the measure of each of them.

Solution:

Given

Two angles are 68° and 76°

Let us consider the other two angles as $5x$ and $7x$

Hence,

$$68^\circ + 76^\circ + 5x + 7x = 360^\circ$$

$$12x + 144^\circ = 360^\circ$$

$$12x = 360^\circ - 144^\circ$$

$$12x = 216^\circ$$

$$x = 216^\circ / 12$$

We get,

$$x = 18^\circ$$

Now, the other angles is calculated as below

$$5x = 5 \times 18^\circ = 90^\circ$$

$$7x = 7 \times 18^\circ = 126^\circ$$

Therefore, the values of the other angles are 90° and 126°

3. Angles of a quadrilateral are $(4x)^\circ$, $5(x+2)^\circ$, $(7x - 20)^\circ$ and $6(x + 3)^\circ$. Find

(i) the value of x .

(ii) each angle of the quadrilateral.

Solution:

Given

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The angles of quadrilateral are,

$$(4x)^{\circ}, 5(x + 2)^{\circ}, (7x - 20)^{\circ} \text{ and } 6(x + 3)^{\circ}$$

We know that the sum of angles in a quadrilateral is 360°

Hence,

$$(4x)^{\circ} + 5(x + 2)^{\circ} + (7x - 20)^{\circ} + 6(x + 3)^{\circ} = 360^{\circ}$$

$$4x + 5x + 10^{\circ} + 7x - 20^{\circ} + 6x + 18^{\circ} = 360^{\circ}$$

$$22x + 8^{\circ} = 360^{\circ}$$

$$22x = 360^{\circ} - 8^{\circ}$$

$$22x = 352^{\circ}$$

$$x = 352^{\circ} / 22$$

We get,

$$x = 16^{\circ}$$

Hence, the value of x is 16°

Therefore, the angles are,

$$(4x)^{\circ} = (4 \times 16)^{\circ}$$

$$= 64^{\circ}$$

$$5(x + 2)^{\circ} = 5(16 + 2)^{\circ}$$

$$= 90^{\circ}$$

$$6(x + 3)^{\circ} = 6(16 + 3)^{\circ}$$

$$= 114^{\circ}$$

And,

$$(7x - 20)^{\circ} = (7 \times 16 - 20)^{\circ}$$

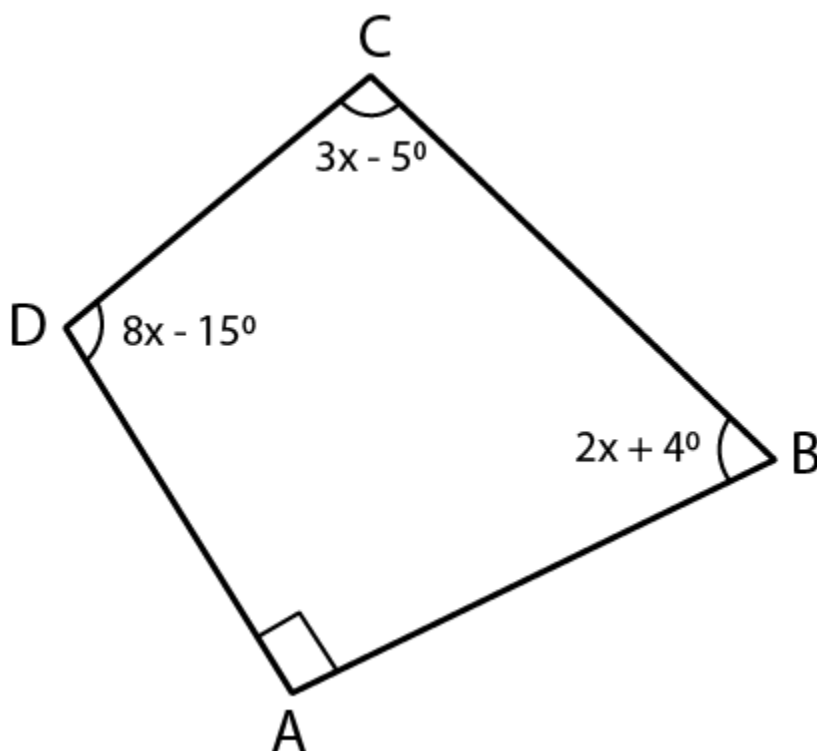
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$$= 92^\circ$$

4. Use the information given in the following figure to find:

(i) x

(ii) $\angle B$ and $\angle C$



Solution:

Here, given that,

$$\angle A = 90^\circ$$

$$\angle B = (2x + 4)^\circ$$

$$\angle C = (3x - 5)^\circ$$

$$\angle D = (8x - 15)^\circ$$

We know that,

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All the angles in a quadrilateral is 360°

So,

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

$$90^\circ + (2x + 4)^\circ + (3x - 5)^\circ + (8x - 15)^\circ = 360^\circ$$

On further calculation, we get

$$90^\circ + 2x + 4^\circ + 3x - 5^\circ + 8x - 15^\circ = 360^\circ$$

$$74^\circ + 13x = 360^\circ$$

$$13x = 360^\circ - 74^\circ$$

$$13x = 286^\circ$$

$$x = 286^\circ / 13$$

We get,

$$x = 22^\circ$$

The value of x is 22°

Now,

$$\angle B = 2x + 4 = 2 \times 22^\circ + 4$$

$$= 48^\circ$$

$$\angle C = 3x - 5 = 3 \times 22^\circ - 5$$

$$= 61^\circ$$

Therefore, $\angle B = 48^\circ$ and $\angle C = 61^\circ$

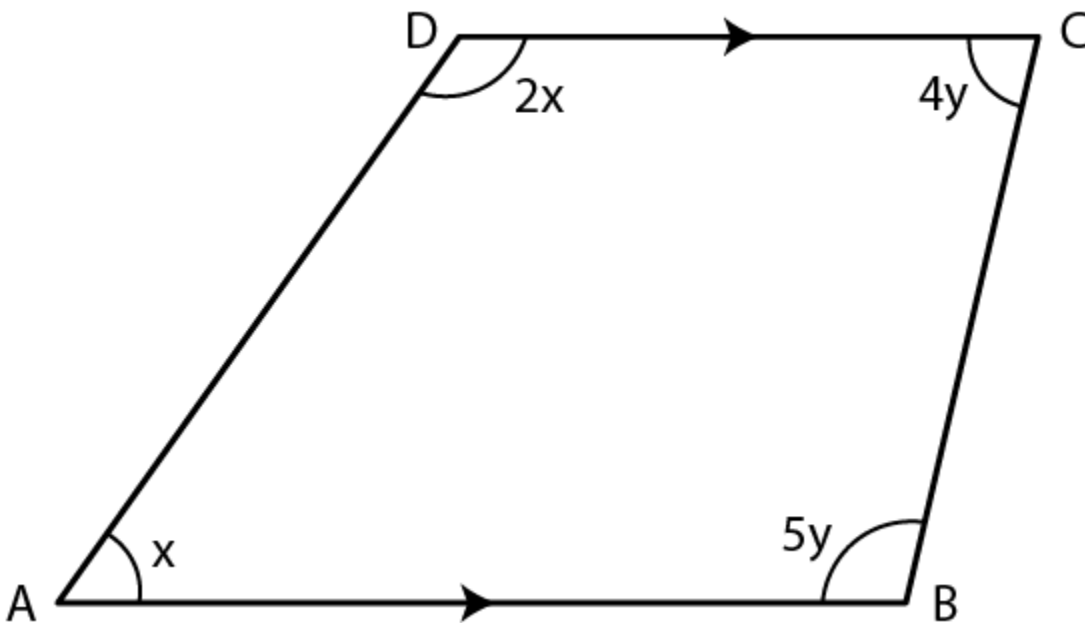
5. In quadrilateral ABCD, side AB is parallel to side DC. If $\angle A : \angle D = 1 : 2$ and $\angle C : \angle B = 4 : 5$

(i) Calculate each angle of the quadrilateral.

(ii) Assign a special name to quadrilateral ABCD.

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Solution:



Given

$$\angle A : \angle D = 1 : 2$$

Let us consider $\angle A = x$ and $\angle D = 2x$

$$\angle C : \angle B = 4 : 5$$

Let us consider $\angle C = 4y$ and $\angle B = 5y$

Also, given

$AB \parallel DC$ and the sum of opposite angles of quadrilateral is 180°

So,

$$\angle A + \angle D = 180^\circ$$

$$x + 2x = 180^\circ$$

$$3x = 180^\circ$$

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We get,

$$x = 60^{\circ}$$

$$\text{Therefore, } \angle A = 60^{\circ}$$

$$\angle D = 2x$$

$$= 2 \times 60^{\circ}$$

$$= 120^{\circ}$$

$$\text{Therefore, } \angle D = 120^{\circ}$$

Now,

$$\angle B + \angle C = 180^{\circ}$$

$$5y + 4y = 180^{\circ}$$

$$9y = 180^{\circ}$$

We get,

$$y = 20^{\circ}$$

Now,

$$\angle B = 5y = 5 \times 20^{\circ}$$

$$= 100^{\circ}$$

$$\angle C = 4y = 4 \times 20^{\circ}$$

$$= 80^{\circ}$$

$$\text{Therefore, } \angle A = 60^{\circ}; \angle B = 100^{\circ}; \angle C = 80^{\circ} \text{ and } \angle D = 120^{\circ}$$

6. From the following figure find:

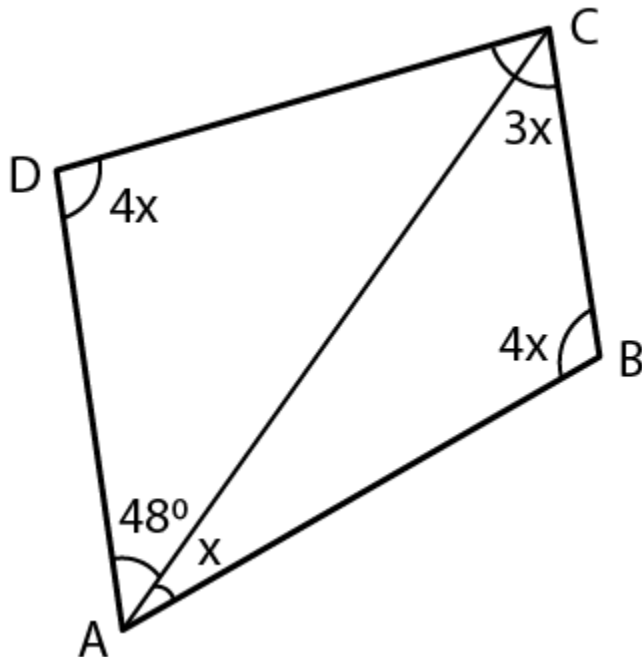
(i) x ,

(ii) $\angle ABC$,

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(iii) $\angle ACD$.

Solution:



(i) We know that,

In quadrilateral the sum of angles is equal to 360°

Hence,

$$x + 4x + 3x + 4x + 48^\circ = 360^\circ$$

$$12x = 360^\circ - 48^\circ$$

$$12x = 312$$

We get,

$$x = 26^\circ$$

Hence, the value of x is 26°

(ii) $\angle ABC = 4x$

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$$4 \times 26^{\circ} = 104^{\circ}$$

Therefore, $\angle ABC = 104^{\circ}$

$$(iii) \angle ACD = 180^{\circ} - 4x - 48^{\circ}$$

$$= 180^{\circ} - 4 \times 26^{\circ} - 48^{\circ}$$

$$= 180^{\circ} - 104^{\circ} - 48^{\circ}$$

We get,

$$= 28^{\circ}$$

Therefore, $\angle ACD = 28^{\circ}$

7. Given: In quadrilateral ABCD; $\angle C = 64^{\circ}$, $\angle D = \angle C - 8^{\circ}$; $\angle A = 5(a + 2)^{\circ}$ and $\angle B = 2(2a + 7)^{\circ}$.

Solution:

Given

$$\angle C = 64^{\circ}$$

$$\angle D = \angle C - 8^{\circ}$$

$$= 64^{\circ} - 8^{\circ}$$

We get,

$$\angle D = 56^{\circ}$$

$$\angle A = 5(a + 2)^{\circ}$$

$$\angle B = 2(2a + 7)^{\circ}$$

We know that, sum of all the angles in a quadrilateral = 360°

So,

$$\angle A + \angle B + \angle C + \angle D = 360^{\circ}$$

$$5(a + 2)^{\circ} + 2(2a + 7)^{\circ} + 64^{\circ} + 56^{\circ} = 360^{\circ}$$

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On further calculation, we get

$$5a + 10^\circ + 4a + 14^\circ + 64^\circ + 56^\circ = 360^\circ$$

$$9a + 144^\circ = 360^\circ$$

$$9a = 360^\circ - 144^\circ$$

$$9a = 216^\circ$$

We get,

$$a = 24^\circ$$

$$\angle A = 5(a + 2)$$

$$= 5(24 + 2)$$

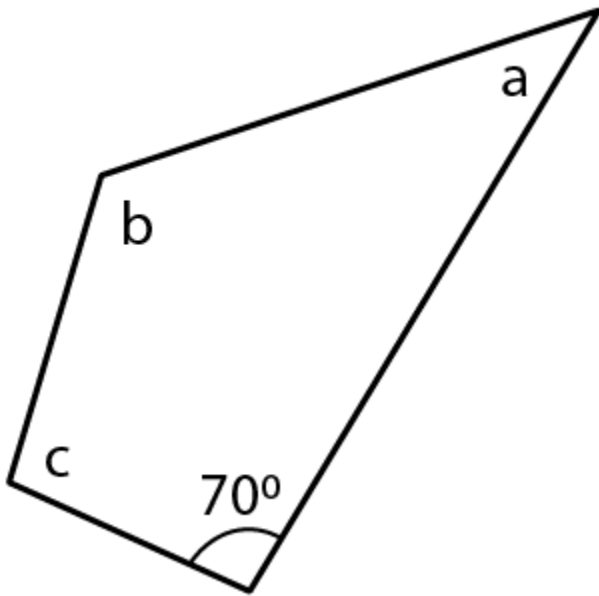
We get,

$$= 130^\circ$$

8. In the given figure

$$\angle b = 2a + 15$$

And $\angle c = 3a + 5$; find the values of b and c



Solution:

$$\angle b = 2a + 15 \text{ and}$$

$$\angle c = 3a + 5$$

Sum of angles of a quadrilateral = 360°

$$70^\circ + \angle a + \angle b + \angle c = 360^\circ$$

$$70^\circ + a + (2a + 15) + (3a + 5) = 360^\circ$$

$$70^\circ + a + 2a + 15 + 3a + 5 = 360^\circ$$

$$6a + 90^\circ = 360^\circ$$

$$6a = 360^\circ - 90^\circ$$

$$6a = 270^\circ$$

We get,

$$a = 45^\circ$$

Hence, $\angle a = 45^\circ$

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$$b = 2a + 15 = 2 \times 45^\circ + 15$$

$$= 90^\circ + 15$$

$$= 105^\circ$$

$$c = 3a + 5 = 3 \times 45^\circ + 5$$

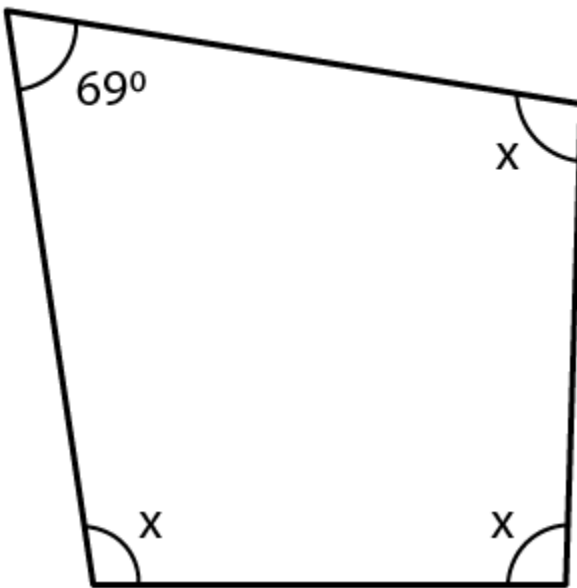
$$= 135^\circ + 5$$

$$= 140^\circ$$

Therefore, $\angle a = 45^\circ$; $\angle b = 105^\circ$ and $\angle c = 140^\circ$

9. Three angles of a quadrilateral are equal. If the fourth angle is 69° ; find the measure of equal angles.

Solution:



Given that,

Three angles of a quadrilateral are equal

Let us consider each angle as x°

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Hence,

$$x^{\circ} + x^{\circ} + x^{\circ} + 69^{\circ} = 360^{\circ}$$

$$3x = 360^{\circ} - 69^{\circ}$$

$$3x = 291^{\circ}$$

$$x = 291^{\circ} / 3$$

We get,

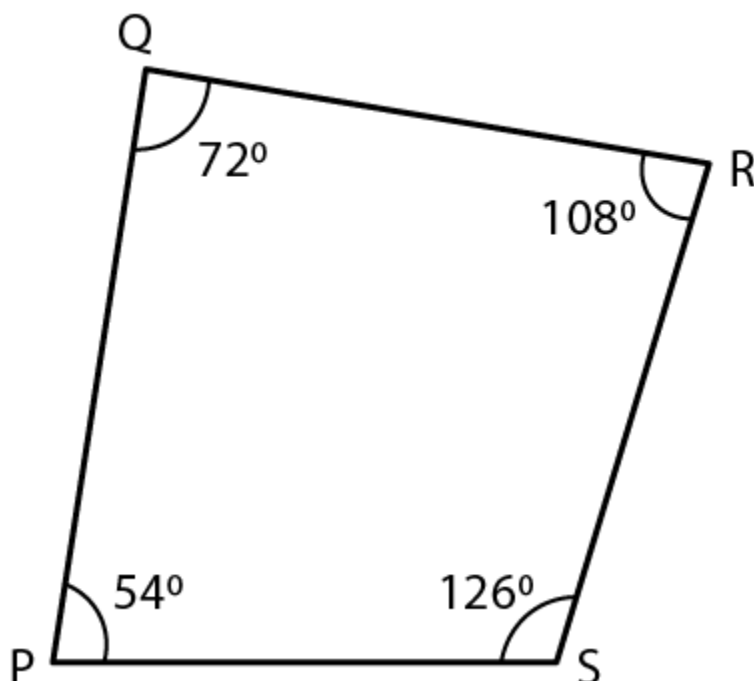
$$x = 97^{\circ}$$

Therefore, the measure of all the equal angles is 97°

10. In quadrilateral PQRS, $\angle P : \angle Q : \angle R : \angle S = 3 : 4 : 6 : 7$.

Calculate each angle of the quadrilateral and then prove that PQ and SR are parallel to each other. Is PS also parallel to QR?

Solution:



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Given

$$\angle P : \angle Q : \angle R : \angle S = 3 : 4 : 6 : 7$$

$$\text{Let } \angle P = 3x$$

$$\angle Q = 4x$$

$$\angle R = 6x \text{ and}$$

$$\angle S = 7x$$

Hence,

$$\angle P + \angle Q + \angle R + \angle S = 360^\circ$$

$$3x + 4x + 6x + 7x = 360^\circ$$

$$20x = 360^\circ$$

$$x = 360^\circ / 20$$

We get,

$$x = 18^\circ$$

So,

$$\angle P = 3x = 3 \times 18^\circ$$

$$= 54^\circ$$

$$\angle Q = 4x = 4 \times 18^\circ$$

$$= 72^\circ$$

$$\angle R = 6x = 6 \times 18^\circ$$

$$= 108^\circ$$

$$\angle S = 7x = 7 \times 18^\circ$$

$$= 126^\circ$$

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Now, adding two adjacent angles, we get

$$\angle Q + \angle R = 72^\circ + 108^\circ$$

$$= 180^\circ \text{ and}$$

$$\angle P + \angle S = 54^\circ + 126^\circ$$

$$= 180^\circ$$

Therefore, $PQ \parallel RS$

Since,

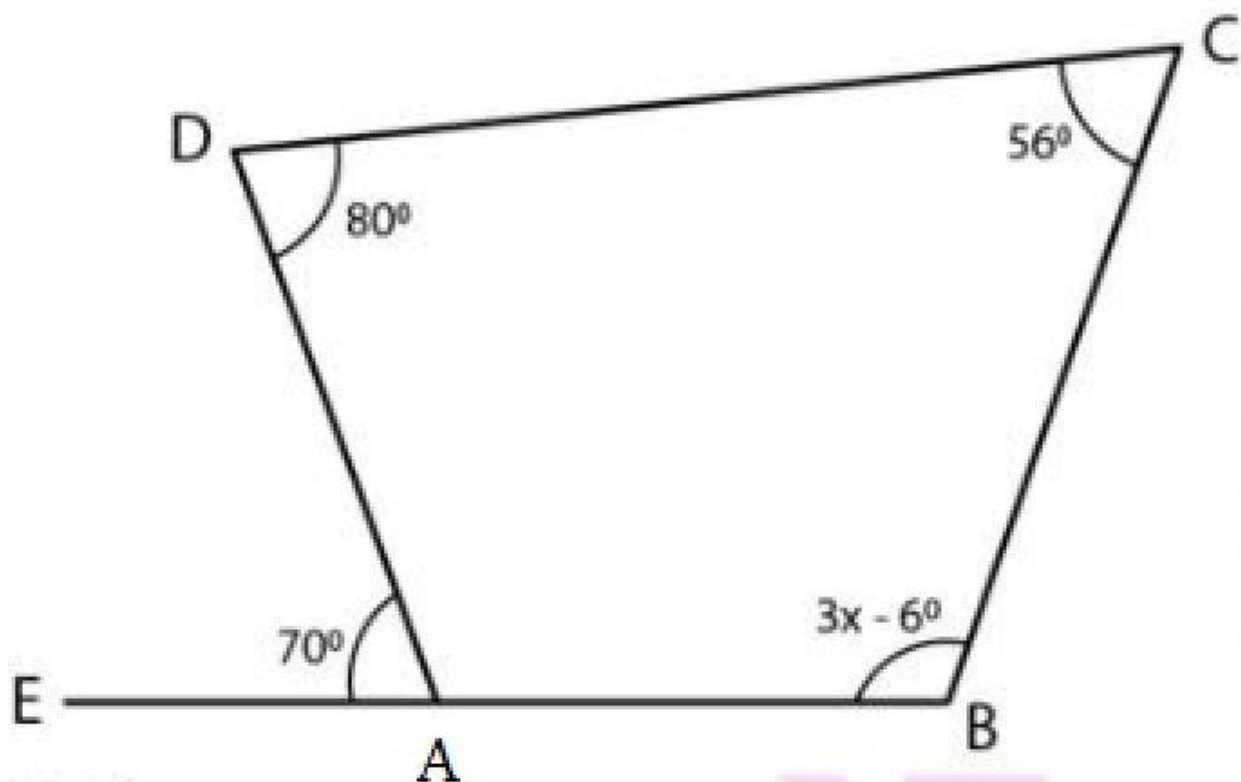
$$\angle P + \angle Q = 54^\circ + 72^\circ$$

$$= 126^\circ$$

Which is not equal to 180°

Therefore, PS and QR are not parallel

11. Use the information given in the following figure to find the value of x.

**Solution:**

Given

A, B, C and D are the vertices of quadrilateral and BA is produced to E

Here,

$$\angle EAD = 70^\circ$$

Hence,

$$\angle DAB = 180^\circ - 70^\circ \text{ [By straight line]}$$

$$\angle DAB = 110^\circ$$

Hence,

$$\angle EAD + \angle DAB = 180^\circ$$

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The sum of angles of a quadrilateral is 360°

$$110^\circ + 80^\circ + 56^\circ + 3x - 6^\circ = 360^\circ$$

$$3x = 360^\circ - 110^\circ - 80^\circ - 56^\circ + 6^\circ$$

$$3x = 360^\circ - 240^\circ$$

$$3x = 120^\circ$$

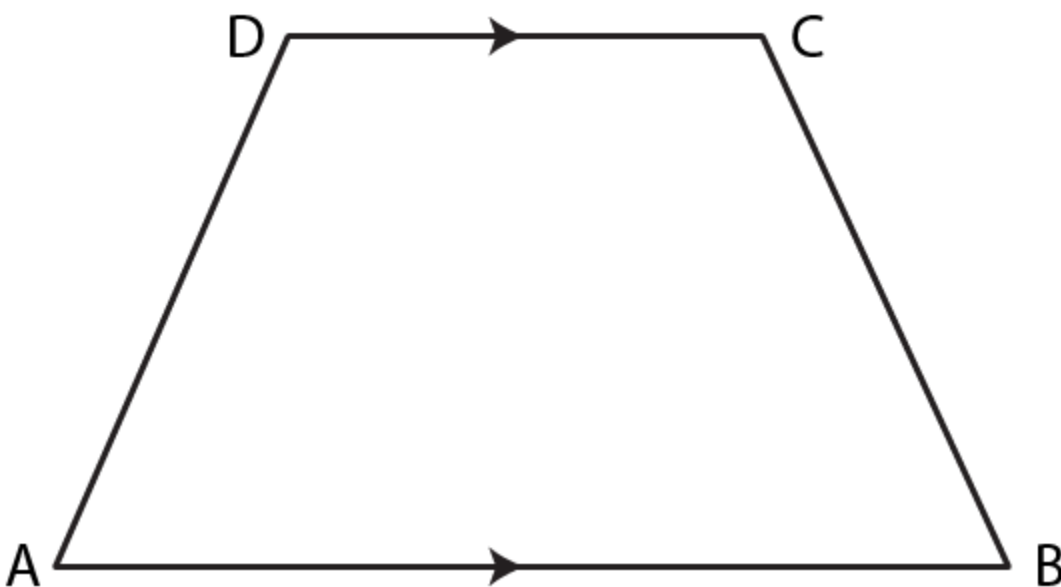
$$x = 120^\circ / 3$$

We get,

$$x = 40^\circ$$

Therefore, the value of x is 40°

12. The following figure shows a quadrilateral in which sides AB and DC are parallel. If $\angle A : \angle D = 4 : 5$, $\angle B = (3x - 15)^\circ$ and $\angle C = (4x + 20)^\circ$, find each angle of the quadrilateral ABCD.



Solution:

Let us consider $\angle A = 4x$ and

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$$\angle D = 5x$$

Since, $AB \parallel DC$

So,

$$\angle A + \angle D = 180^\circ$$

Substituting the value of angle A and D, we get

$$4x + 5x = 180^\circ$$

$$9x = 180^\circ$$

$$x = 20^\circ$$

Now,

$$\angle A = 4x = 4 \times 20^\circ$$

$$= 80^\circ$$

$$\angle D = 5x = 5 \times 20^\circ$$

$$= 100^\circ$$

Similarly since, $AB \parallel DC$

$$\angle B + \angle C = 180^\circ$$

$$3x - 15^\circ + 4x + 20^\circ = 180^\circ$$

$$7x + 5^\circ = 180^\circ$$

$$7x = 180^\circ - 5^\circ$$

$$7x = 175^\circ$$

We get,

$$x = 25^\circ$$

$$\angle B = 3x - 15^\circ = 3 \times 25^\circ - 15^\circ$$

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$$= 75^{\circ} - 15^{\circ}$$

$$= 60^{\circ} \text{ and}$$

$$\angle C = 4x + 20^{\circ} = 4 \times 25^{\circ} + 20^{\circ}$$

$$= 100^{\circ} + 20^{\circ}$$

$$= 120^{\circ}$$

Exercise 27(B)

1. In a trapezium ABCD, side AB is parallel to side DC. If $\angle A = 78^{\circ}$ and $\angle C = 120^{\circ}$, find angles B and D.

Solution:

Given

AB || DC and BC is transversal

We know that,

The sum of co-interior angles of a parallelogram = 180°

Hence,

$$\angle B + \angle C = 180^{\circ}$$

$$\angle B + 120^{\circ} = 180^{\circ}$$

$$\angle B = 180^{\circ} - 120^{\circ}$$

We get,

$$\angle B = 60^{\circ}$$

Also,

$$\angle A + \angle D = 180^{\circ}$$

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$$78^\circ + \angle D = 180^\circ$$

$$\angle D = 180^\circ - 78^\circ$$

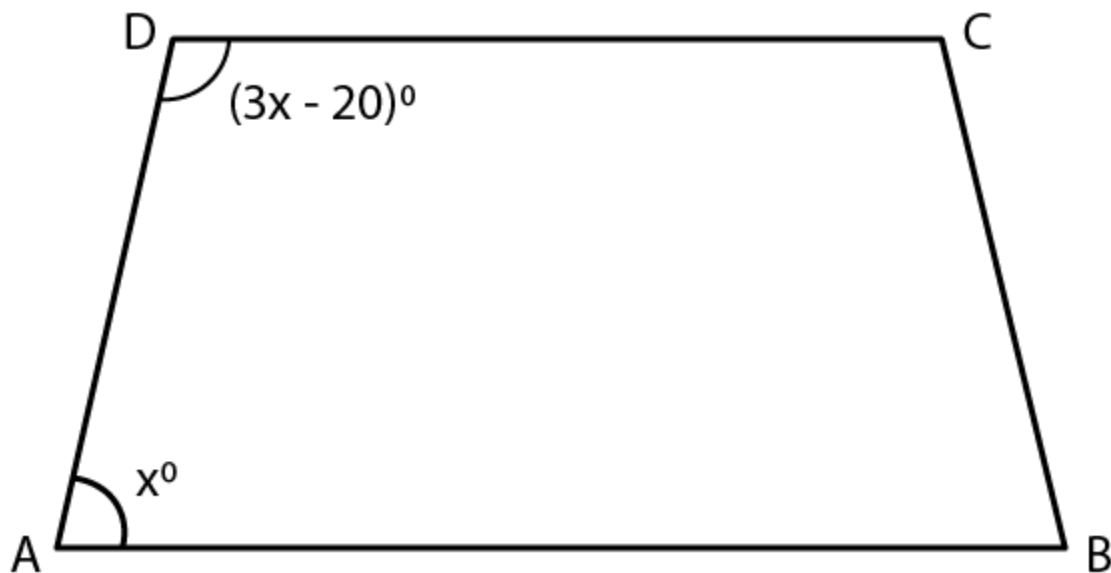
We get,

$$\angle D = 102^\circ$$

Therefore, $\angle B = 60^\circ$ and $\angle D = 102^\circ$

2. In a trapezium ABCD, side AB is parallel to side DC. If $\angle A = x^\circ$ and $\angle D = (3x - 20)^\circ$; find the value of x.

Solution:



Given

$AB \parallel DC$ and BC is transversal

The sum of co-interior angles of a parallelogram = 180°

Hence,

$$\angle A + \angle D = 180^\circ$$

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$$x^{\circ} + (3x - 20)^{\circ} = 180^{\circ}$$

$$x^{\circ} + 3x - 20^{\circ} = 180^{\circ}$$

$$4x^{\circ} = 180^{\circ} + 20^{\circ}$$

$$4x^{\circ} = 200^{\circ}$$

$$x^{\circ} = 200^{\circ} / 4$$

We get,

$$x^{\circ} = 50^{\circ}$$

Hence, the value of x is 50°

3. The angles A, B, C and D of a trapezium ABCD are in the ratio 3: 4: 5: 6. Let $\angle A$: $\angle B$: $\angle C$: $\angle D = 3$: 4 : 5 : 6 . Find all the angles of the trapezium. Also, name the two sides of this trapezium which are parallel to each other. Give reason for your answer

Solution:

Let us consider the angles of a parallelogram ABCD be $3x$, $4x$, $5x$ and $6x$

We know that,

The sum of angles of a parallelogram = 360°

Hence,

$$\angle A + \angle B + \angle C + \angle D = 360^{\circ}$$

$$3x + 4x + 5x + 6x = 360^{\circ}$$

$$18x = 360^{\circ}$$

$$x = 360^{\circ} / 18$$

We get,

$$x = 20^{\circ}$$

Now, the angles are,

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$$\angle A = 3x = 3 \times 20^\circ$$

$$\angle A = 60^\circ$$

$$\angle B = 4x = 4 \times 20^\circ$$

$$\angle B = 80^\circ$$

$$\angle C = 5x = 5 \times 20^\circ$$

$$\angle C = 100^\circ$$

$$\angle D = 6x = 6 \times 20^\circ$$

$$\angle D = 120^\circ$$

Here,

The sum of $\angle A$ and $\angle D = 180^\circ$

Therefore, AB is parallel to DC and the angles are co-interior angles whose sum = 180°

4. In an isosceles trapezium one pair of opposite sides are to each other and the other pair of opposite sides are to each other.

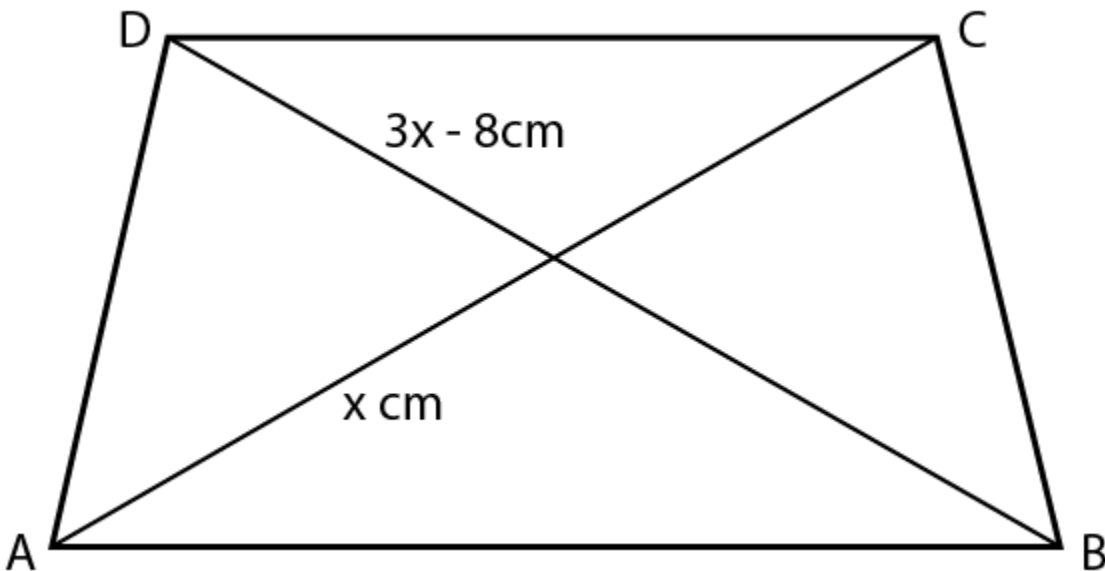
Solution:

In an isosceles trapezium one pair of opposite sides are **parallel** to each other and the other pair of opposite sides are **equal** to each other.

5. Two diagonals of an isosceles trapezium are x cm and (3x – 8) cm. Find the value of x.

Solution:

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We know that,

The diagonals of an isosceles trapezium are of equal length

Figure

Hence,

$$3x - 8 = x$$

$$3x - x = 8$$

$$2x = 8$$

$$x = 8 / 2$$

We get,

$$x = 4$$

Therefore, the value of x is 4 cm

6. Angle A of an isosceles trapezium is 115° ; find the angles B, C and D.

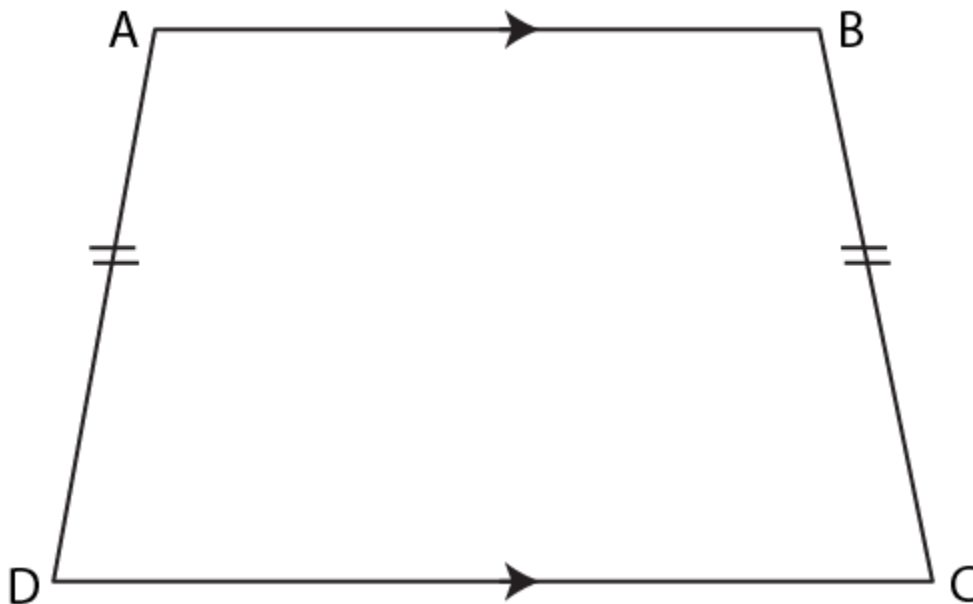
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Solution:

Since, the base angles of an isosceles trapezium are equal

Hence,

$$\angle A = \angle B = 115^\circ$$



Also,

$\angle A$ and $\angle D$ are co-interior angles

The sum of co-interior angles of a quadrilateral is 180°

So,

$$\angle A + \angle D = 180^\circ$$

$$115^\circ + \angle D = 180^\circ$$

$$\angle D = 180^\circ - 115^\circ$$

We get,

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$$\angle D = 65^\circ$$

Hence,

$$\angle D = \angle C = 65^\circ$$

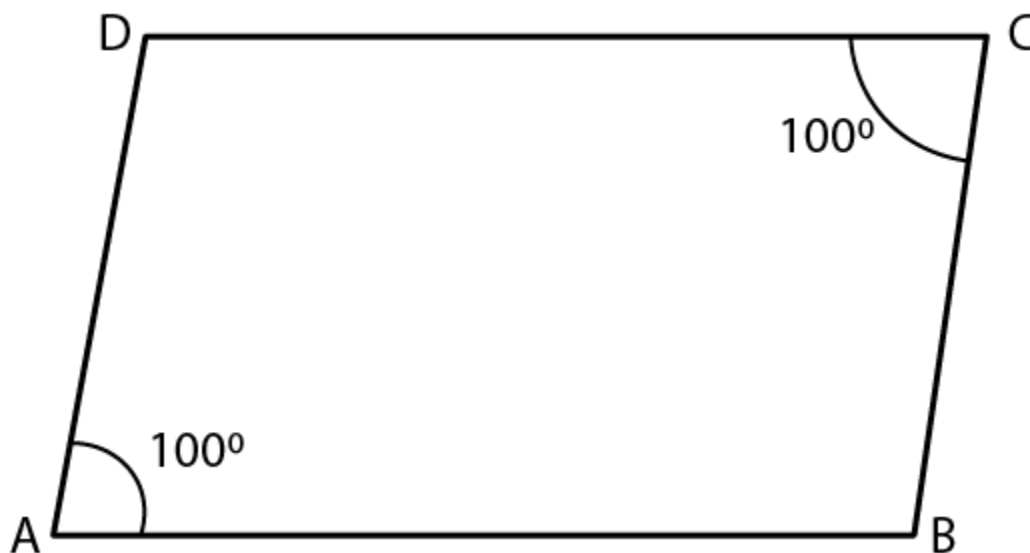
Therefore, the values of angles B, C and D are 115° , 65° and 65°

7. Two opposite angles of a parallelogram are 100° each. Find each of the other two opposite angles.

Solution:

Given

Two opposite angles of a parallelogram are 100° each



The sum of adjacent angles of a parallelogram = 180°

Hence,

$$\angle A + \angle B = 180^\circ$$

$$100^\circ + \angle B = 180^\circ$$

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$$\angle B = 180^\circ - 100^\circ$$

We get,

$$\angle B = 80^\circ$$

We know that,

The opposite angles of a parallelogram are equal

$$\angle D = \angle B = 80^\circ$$

Therefore, the other two opposite angles $\angle D = \angle B = 80^\circ$

8. Two adjacent angles of a parallelogram are 70° and 110° respectively. Find the other two angles of it.

Solution:

Given

Two adjacent angles of a parallelogram are 70° and 110° respectively



We know that,

Opposite angles of a parallelogram are equal.

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Hence, $\angle C = \angle A = 70^\circ$ and $\angle D = \angle B = 110^\circ$

9. The angles A, B, C and D of a quadrilateral are in the ratio 2: 3: 2: 3. Show this quadrilateral is a parallelogram.

Solution:

Given

Angles of a quadrilateral are in the ratio 2: 3: 2: 3

Let us consider the angles A, B, C and D be $2x$, $3x$, $2x$ and $3x$

We know that,

The sum of interior angles of a quadrilateral = 360°

So,

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

$$2x + 3x + 2x + 3x = 360^\circ$$

$$10x = 360^\circ$$

$$x = 360^\circ / 10$$

We get,

$$x = 36^\circ$$

Hence, the measure of each angle is as follows

$$\angle A = \angle C = 2x = 2 \times 36^\circ$$

$$\angle A = \angle C = 72^\circ$$

$$\angle B = \angle D = 3x = 3 \times 36^\circ$$

$$\angle B = \angle D = 108^\circ$$

Since the opposite angles are equal and

The adjacent angles are supplementary

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i.e $\angle A + \angle B = 180^\circ$

$$72^\circ + 108^\circ = 180^\circ$$

$$180^\circ = 180^\circ \text{ and}$$

$$\angle C + \angle D = 180^\circ$$

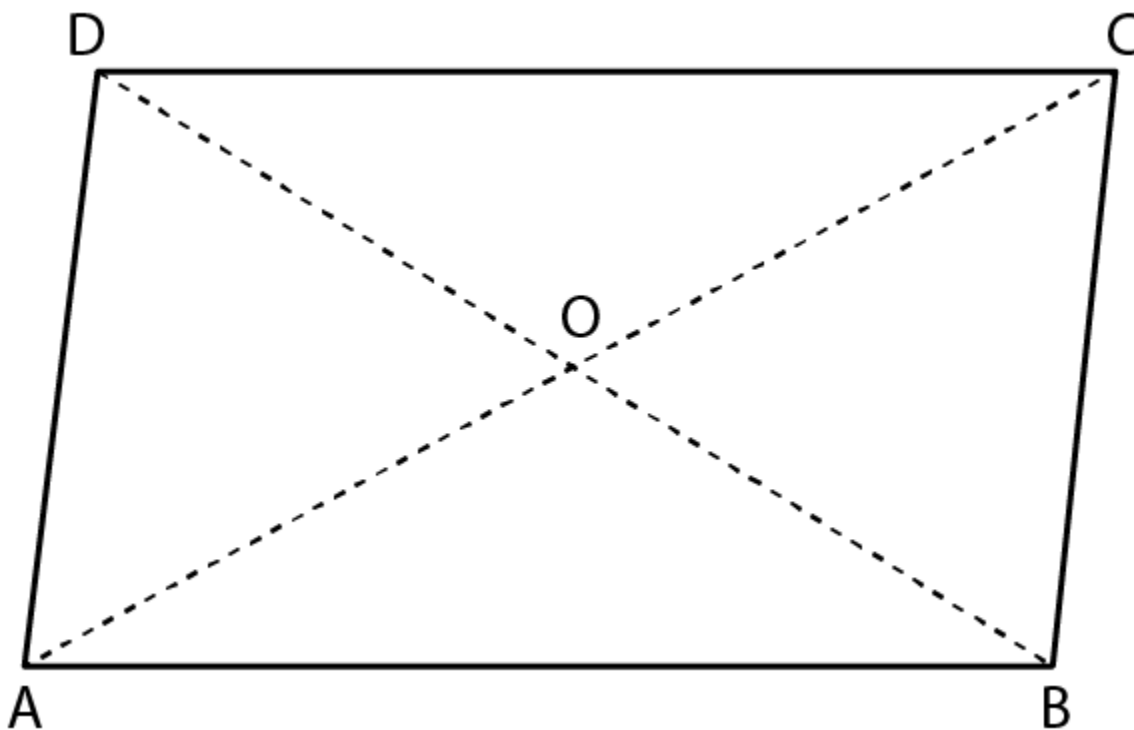
$$72^\circ + 108^\circ = 180^\circ$$

$$180^\circ = 180^\circ$$

Quadrilateral ABCD fulfills the condition

Therefore, a quadrilateral ABCD is a parallelogram

10. In a parallelogram ABCD, its diagonals AC and BD intersect each other at point O.



If AC = 12 cm and BD = 9 cm; find; lengths of OA and OB

Solution:

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Given

AC and BD intersect each other at point O

So,

$$OA = OC = (1 / 2) AC \text{ and}$$

Similarly,

$$OB = OD = (1 / 2) BD$$

Hence,

$$OA = (1 / 2) \times AC$$

$$= (1 / 2) \times 12$$

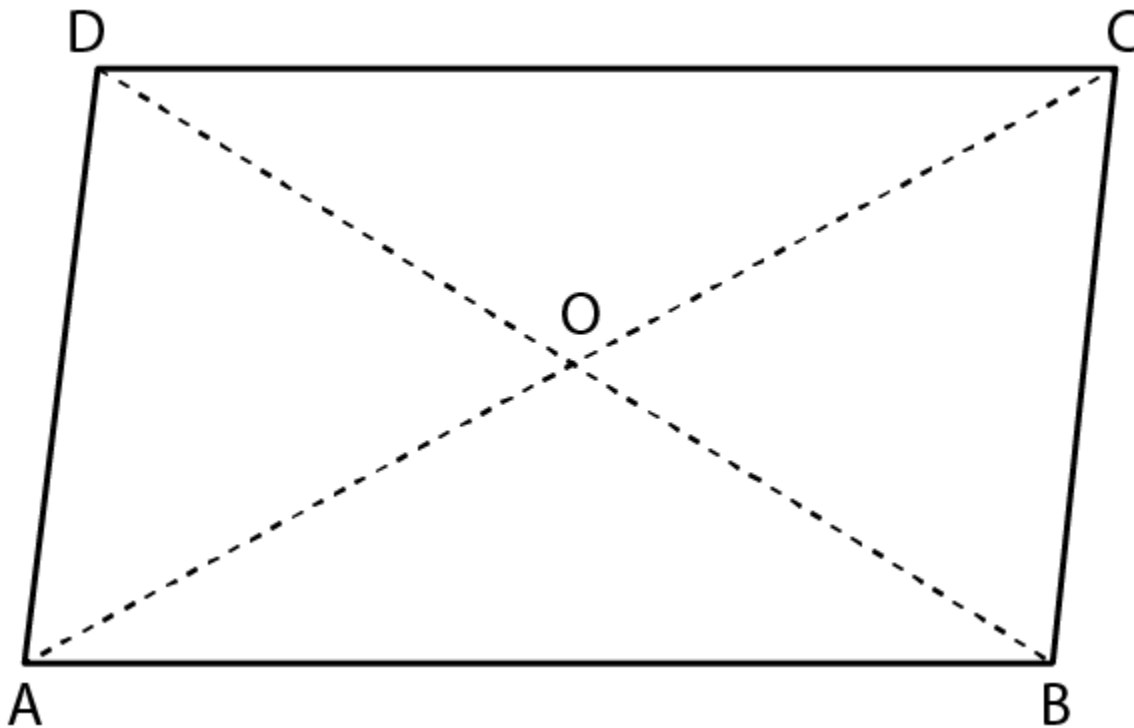
$$= 6 \text{ cm}$$

$$OB = (1 / 2) \times BD$$

$$= (1 / 2) \times 9$$

$$= 4.5 \text{ cm}$$

11. In a parallelogram ABCD, its diagonals intersect at point O. If OA = 6 cm and OB = 7.5 cm, find the lengths of AC and BD.

**Solution:**

The diagonals AC and BD intersect each other at point O

So,

$$OA = OC = (1 / 2) AC \text{ and}$$

$$OB = OD = (1 / 2) BD$$

So,

$$OA = (1 / 2) \times AC$$

$$AC = 2 \times OA$$

$$AC = 2 \times 6$$

We get,

$$AC = 12 \text{ cm and}$$

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$$OB = (1 / 2) \times BD$$

$$BD = 2 \times OB$$

$$BD = 2 \times 7.5$$

We get,

$$BD = 15 \text{ cm}$$

12. In a parallelogram ABCD, $\angle A = 90^\circ$

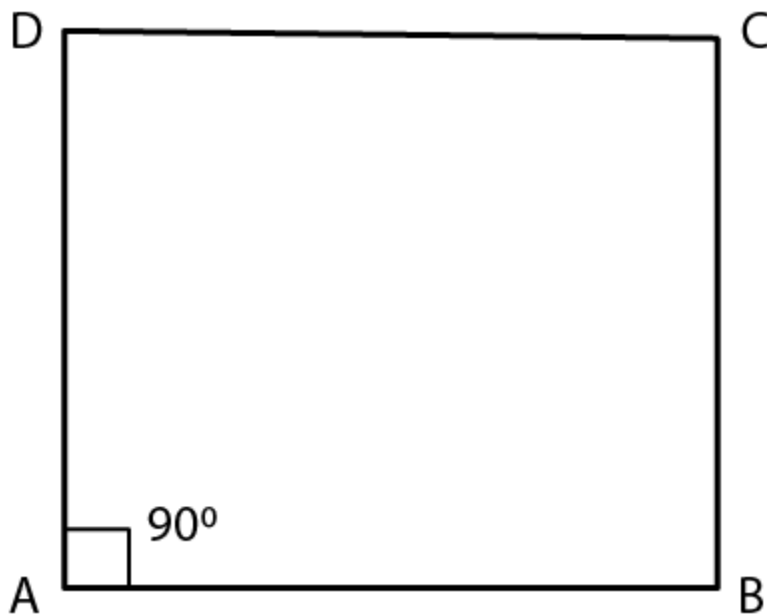
(i) What is the measure of angle B.

(ii) Write the special name of the parallelogram.

Solution:

Given

In a parallelogram ABCD, $\angle A = 90^\circ$



(i) We know that,

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In a parallelogram, adjacent angles are supplementary

Hence,

$$\angle A + \angle B = 180^\circ$$

$$90^\circ + \angle B = 180^\circ$$

$$\angle B = 180^\circ - 90^\circ$$

We get,

$$\angle B = 90^\circ$$

Therefore, the measure of $\angle B = 90^\circ$

(ii) Since all the angles of a given parallelogram is right angle.

Hence the given parallelogram is a rectangle

13. One diagonal of a rectangle is 18 cm. What is the length of its other diagonal?

Solution:

We know that,

In a rectangle, the diagonal are equal

Hence,

$$AC = BD$$

Given that one diagonal of a rectangle is 18 cm

Hence, the other diagonal of a rectangle will be = 18 cm

Therefore, the length of the other diagonal is 18 cm

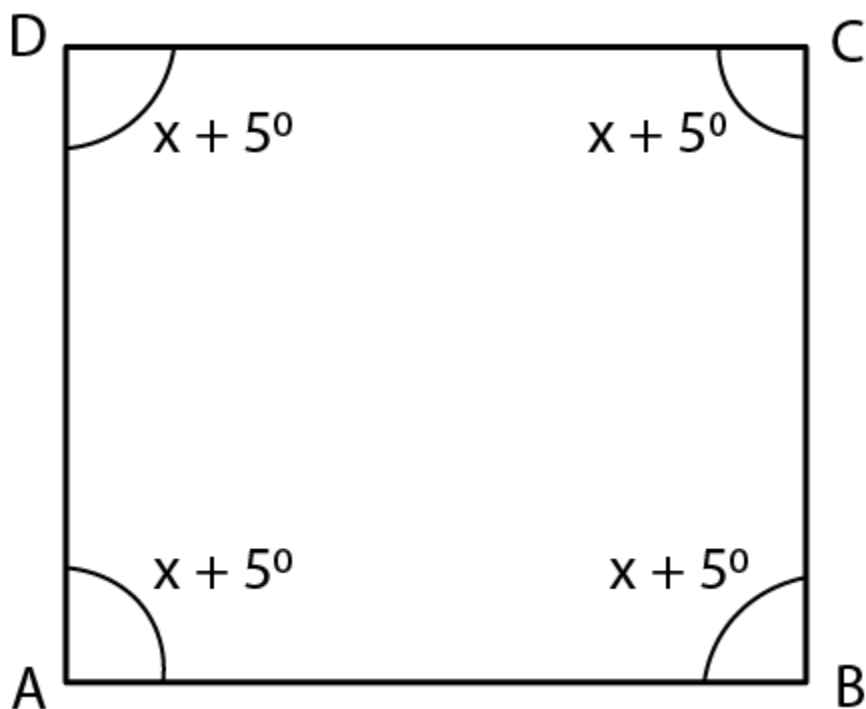
14. Each angle of a quadrilateral is $x + 5^\circ$. Find:

(i) the value of x

(ii) each angle of the quadrilateral.

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(iii) Give the special name of the quadrilateral taken.



Solution:

(i) We know that,

The sum of interior angles of a quadrilateral is 360°

Hence,

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

$$x + 5^\circ + x + 5^\circ + x + 5^\circ + x + 5^\circ = 360^\circ$$

$$4x + 20^\circ = 360^\circ$$

$$4x = 360^\circ - 20^\circ$$

$$4x = 340^\circ$$

$$x = 340^\circ / 4$$

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We get,

$$x = 85^{\circ}$$

Hence, the value of x is 85°

(ii) Each angle of the quadrilateral ABCD = $x + 5^{\circ}$

$$= 85^{\circ} + 5^{\circ}$$

We get,

$$= 90^{\circ}$$

Therefore, each angle of the quadrilateral = 90°

(iii) The name of the taken quadrilateral is a rectangle

15. If three angles of a quadrilateral are 90° each, show that the given quadrilateral is a rectangle.

Solution:

If each angle of quadrilateral is 90° , then the given quadrilateral will be a rectangle

We know that,

The sum of interior angles of a quadrilateral is 360°

Hence,

$$\angle A + \angle B + \angle C + \angle D = 360^{\circ}$$

$$90^{\circ} + 90^{\circ} + 90^{\circ} + \angle D = 360^{\circ}$$

$$270^{\circ} + \angle D = 360^{\circ}$$

$$\angle D = 360^{\circ} - 270^{\circ}$$

We get,

$$\angle D = 90^{\circ}$$

Since,

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Each angle of the quadrilateral = 90°

Therefore, the given quadrilateral is a rectangle.



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