



MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

PARALLELOGRAMS

Example

1. Prove that any two adjacent angles of a parallelogram are supplementary .



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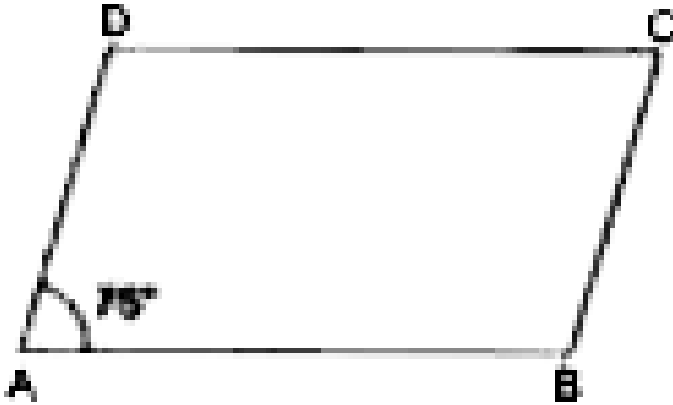
2. Two adjacent angles of a parallelogram are as 2:3. Find the measures of all the angles.



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3. In the adjoining figure, ABCD is a parallelogram in which $\angle A = 75^\circ$. Find the measure of each of the angles $\angle B$, $\angle C$ and

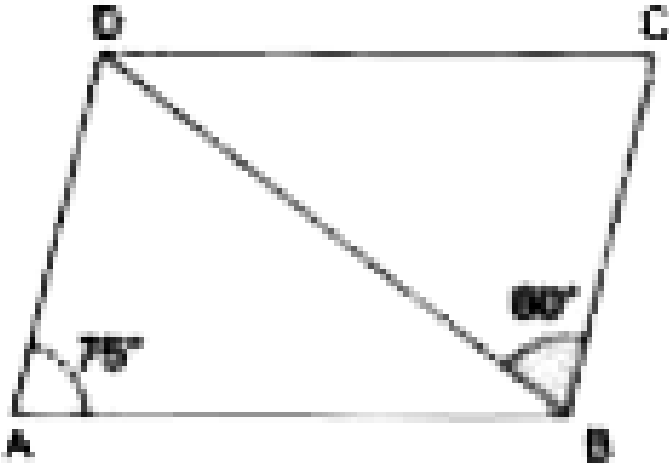
$\angle D$



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4. In the adjoining figure, $ABCD$ is a parallelogram in which $\angle BAD = 75^\circ$ and $\angle DBC = 60^\circ$. Calculate (i) $\angle CDB$ and (ii)

$\angle ADB$

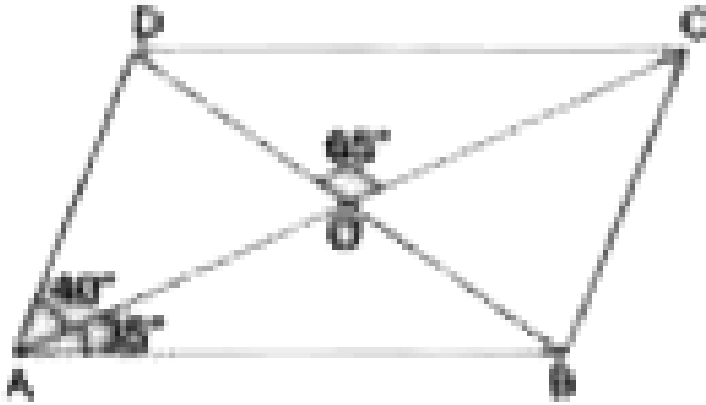


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5. In the adjoining figure , ABCD is a parallelogram in which $\angle CAD = 40^\circ$, $\angle BAC = 35^\circ$ and

$\angle COD = 65^\circ$ Calculate : (i) $\angle ABD$ (ii) $\angle BDC$

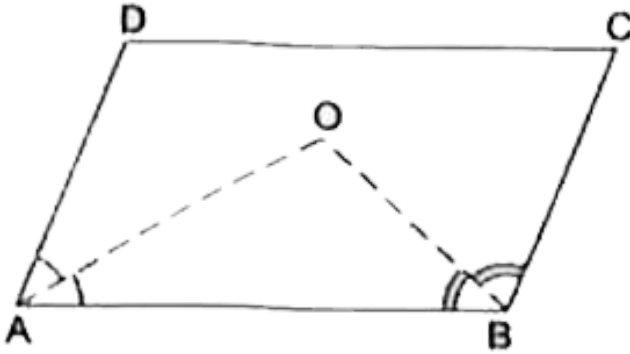
(iii) $\angle ACB$ (iv) $\angle CBD$



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6. In the adjoining figure, ABCD is a parallelogram, AO and BO are the bisectors of $\angle A$ and $\angle B$ respectively. Prove that

$$\angle AOB = 90^\circ.$$



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7. The ratio of two sides of a parallelogram is 4:3. if its perimeter is 56 cm, find the lengths of longer side.

A. 16 cm

B. 8 cm

C. 12 cm

D. none of these

Answer: A



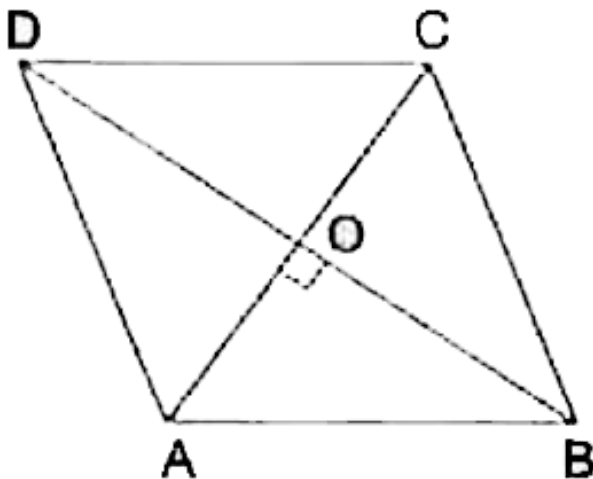
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8. The length of a rectangle is 8 cm and each of its diagonals measures 10 cm. Find its breadth.



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9. In the adjacent figure , ABCD is a rhombus whose diagonals AC and BD intersect at a point O. If side AB=10 cm and diagonal BD=16 cm , find the length of diagonal AC.



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Exercise 16 A

1. ABCD is a parallelogram in which $\angle A = 110^\circ$. Find the measure of each of the angles $\angle B$, $\angle C$ and $\angle D$.



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2. Two adjacent angles of a parallelogram are equal. What is the measure of each?

A. 80°

B. 90°

C. 70°

D. 60°

Answer: B



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3. Two adjacent angles of a parallelogram are in the ratio 4:5. Find the measure of each of its angles.

A. 70° , 110° , 70° , 110°

B. 60° , 120° , 60° , 120°

C. 80° , 100° , 80° , 100°

D. 50° , 130° , 50° , 130°

Answer: C



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4. Two adjacent angles of a parallelogram are $(3x - 4)^\circ$ and $(3x + 16)^\circ$. Find the value of

x and hence find the measure of each of its angles.



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5. The sum of two opposite angles of a parallelogram is 150, so the measure of each of the other two angles is



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6. Two sides of a parallelogram are in the ratio 5:3. If its perimeter is 64 cm, find the lengths of its sides.



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7. The perimeter of a parallelogram is 140cm . If one of the sides is longer than the other by 10 cm, find the length of each of its sides.



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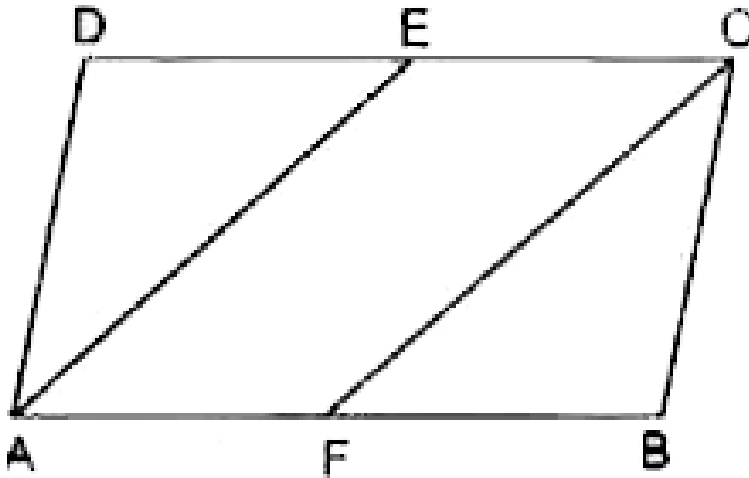
8. In Figure, $ABCD$ is a rectangle. BM and DN are perpendicular from B and D respectively on AC . Prove that $MBC \cong DNA$ (ii) $BM = DN$



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9. In the adjacent figure, $ABCD$ is a parallelogram and line segments AE and CF bisect the angles A and C respectively. Show

that $AE \parallel CF$.



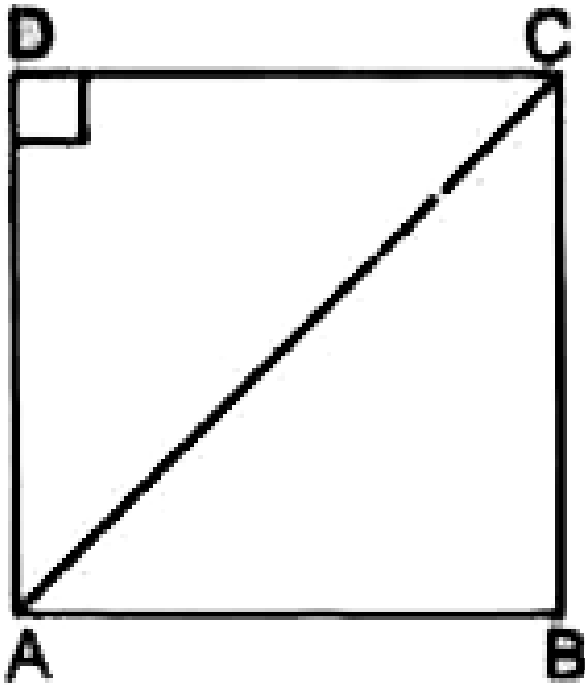
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10. The lengths of the diagonals of a rhombus are 16 cm and 12 cm respectively. Find the length of each of its sides.



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11. In the given figure ABCD is a square . Find the measure of $\angle CAD$.



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12. The sides of a rectangle are in the ratio 5 : 4 and its perimeter is 90 cm. Find its length and breadth.



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13. Name each of the following parallelograms. The diagonals are equal and the adjacent sides are unequal .



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14. Name each of the following parallelograms.

The diagonals are equal and the adjacent sides are equal .



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15. Name each of the following parallelograms.

The diagonals are unequal and the adjacent sides are equal .



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16. Name each of the following parallelograms.

All the sides are equal and one angle is 60° .



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17. Name each of the following parallelograms.

All the sides are equal and one angle is 90° .



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18. Name each of the following parallelograms.

All the angles are equal and the adjacent sides are unequal .



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19. The diagonals of a parallelograms are equal

.



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20. Which of the following statements are true and which are false ?

The diagonals of a rectangle are perpendicular to each other .



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21. Which of the following statements are true and which are false ?

The diagonals of a rhombus are equal.



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22. Which of the following statements are true and which are false ?

Every rhombus is a kite.



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23. Which of the following statements are true and which are false ?

Every rectangle is a square



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24. Which of the following statements are true and which are false ?

Every square is a parallelogram.



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25.

Is Every square a rhombus.

A. no

B. yes

C. insufficient information

D. none of the above

Answer: B



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26. Which of the following statements are true and which are false ?

Every parallelogram is a rectangle .



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27. Which of the following statements are true and which are false ?

Every parallelogram is a rectangle.



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28. Which of the following statements are true and which are false ?

Every rhombus is a parallelogram.



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Exercise 16 B

1. The two diagonals are not necessarily equal
in a

A. rectangle

B. square

C. rhombus

D. isosceles trapezium

Answer: C



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2. The lengths of the diagonals of a rhombus are 16 cm and 12 cm . The length of each side of the rhombus is

A. 8cm

B. 9 cm

C. 10 cm

D. 12 cm

Answer: C



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3. Two adjacent angles of a parallelogram are

$(2x + 25)^\circ$ and $(3x - 5)^\circ$. The value of x is

A. 28

B. 32

C. 36

D. 42

Answer: B



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4. The diagonals do not necessarily intersect at right angles in a

A. parallelogram

B. square

C. rhombus

D. kite

Answer: A



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5. The length and breadth of a rectangle are in the ratio 4:3. If the diagonal measures 25 cm then the perimeter of the rectangle is

A. 56 cm

B. 60 cm

C. 70 cm

D. 80 cm

Answer: C



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6. The bisectors of any two adjacent angles of a parallelogram intersect at

A. 30°

B. 45°

C. 60°

D. 90°

Answer: D



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7. If an angle of a parallelogram is two-thirds of its adjacent angle, the smallest angle of the parallelogram is

A. 54°

B. 72°

C. 81°

D. 108°

Answer: B



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8. The diagonals do not necessarily bisect the interior angles at the vertices in a

A. rectangle

B. square

C. rhombus

D. all of these

Answer: A



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9. In a square ABCD, $AB=(2x+3)$ cm and $BC=(3x-5)$ cm . Then , the value of x is

A. 4

B. 5

C. 6

D. 8

Answer: D



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10. If one angle of a parallelogram is 24° less than twice the smallest angle then the largest angle of the parallelogram is

A. 68°

B. 102°

C. 112°

D. 176°

Answer: C



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