MATHS

NCERT - NCERT Mathematics(HINGLISH)

THE TRIANGLE AND ITS PROPERTIES

Exercise 6 3

1. Find the value of the unknown x in the following diagrams:

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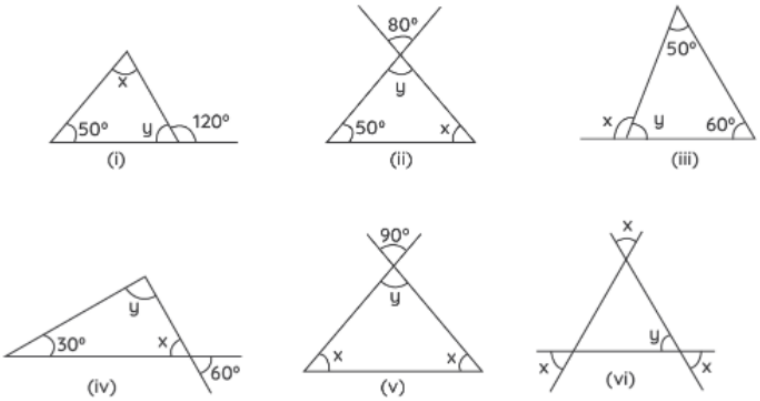
2. Find the values of the unknowns x and y in the following diagrams



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Solved Examples

1. Determine whether the triangle whose lengths of sides are $3cm$, $4cm$, $5cm$ is a right-angled triangle.

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2. The lengths of two sides of a triangle are 6 cm and 8 cm. Between which two numbers can length of the third side fall?

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3. ΔABC is right-angled at C. If $AC = 5cm$ and $BC = 12cm$ find the length of AB.

A. 17

B. 7

C. 13

D. 14

Answer: C

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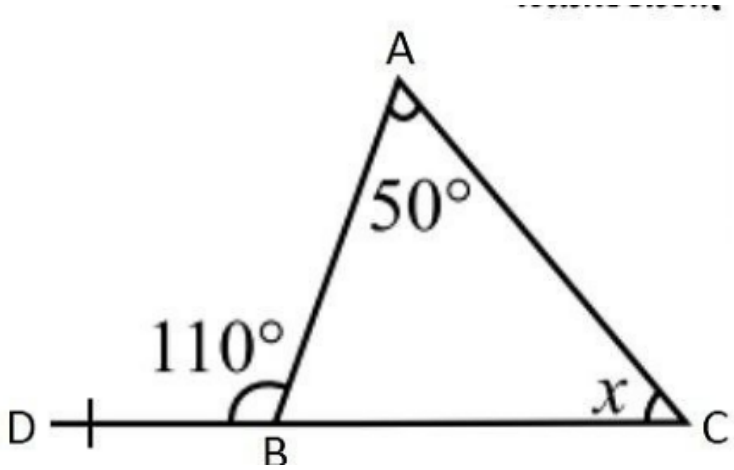
4. Find angle x in Fig 6.11.



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5. Is there a triangle whose sides have lengths $10.2cm$, $5.8cm$ and $4.5cm$?

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6. In the given figure find m$\angle P$.

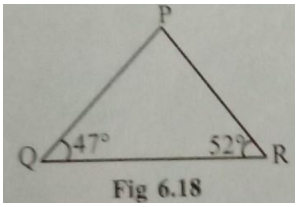

Fig 6.18

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Exercise 6 4

1. $ABCD$ is quadrilateral. Is $AB + BC + CD + DA < 2(AC + BD)$?

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2. $ABCD$ is a quadrilateral. Is $AB + BC + CD + DA > AC + BD$?

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3. The lengths of two sides of a triangle are 12 cm and 15 cm. Between what two measures should the length of the third side fall?

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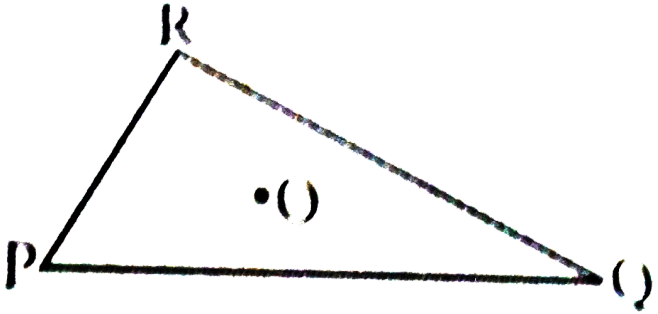
4. Is it possible to have a triangle with the following sides?

(i) $2cm$, $3cm$, $5cm(ii)$3cm, 6cm, 7cm(iii)6cm, 3cm, 2 cm`



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5. AM is a median of s triangle ABC. Is $AB + BC + CA > 2AM$? (Consider the sides of triangles ΔABM and ΔAMC.

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6. Take any point O in the interior of a triangle PQR. Is (i) $OP + OQ > PQ$? (ii) $OQ + OR > QR$? (iii) $OR + OP > RP$?

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Exercise 6 5

1. A tree is broken at a height of $5m$ from the ground and its top touches the ground at a distance of $12m$ from the base of the tree. Find the original height of the tree

A. $17m$

B. $18m$

C. $16m$

D. $14m$

Answer: B

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2. Angles Q and R of a ΔPQR are 25° and 65°. Write which of the following is true : (i) $PQ^2 + QR^2 = RP^2$ (ii) $PQ^2 + RP^2 = QR^2$ (iii) $RP^2 + QR^2 = PQ^2$

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3. Find the perimeter of the rectangle whose length is $40cm$ and a diagonal is $41cm$.

A. $97cm$

B. $89cm$

C. $98cm$

D. $88cm$

Answer: C

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4. Which of the following can be the sides of a righttriangle?(i) 2.5 cm,6.5 cm, 6 cm.(ii) 2 cm, 2 cm, 5 cm.(iii) 1.5 cm, 2cm, 2.5 cm.In the case of right-angled triangles, identify theright angles.

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5. ABC is a triangle right angled at C. If $AB = 25cm$ and $AC = 7cm$, find BC.

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6. A 15 m long ladder reached a window 12 m highfrom the ground on placing it against a wall at a distance a. Find the distance of the foot of theladder from the wall.

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7. PQR is a triangle right angled at P. If $PQ = 10cm$ and $PR = 24cm$, find QR

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8. The diagonals of a rhombus measure 16 cm and 30 cm. Find its perimeter

A. $62cm$

B. $65cm$

C. $61cm$

D. $68cm$

Answer: D

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Exercise 6 1

1. In ΔPQR, D is the mid-point of $\overline{QR}$. $then \overline{PM}$ is _____,PD is_____. Is $QM = MR?$

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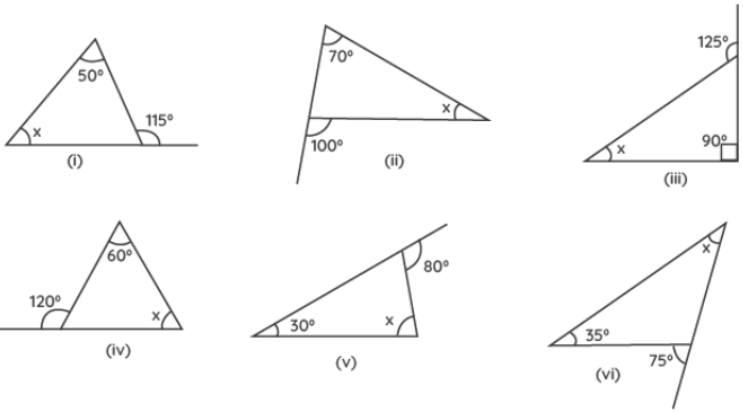
Exercise 6 2

1. Find the value of the unknown interior angle x in the following figures:



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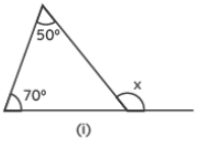
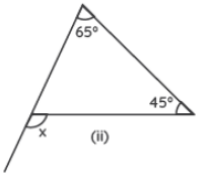
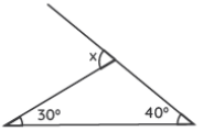
2. Find the value of the unknown exterior angle x in the following diagrams:



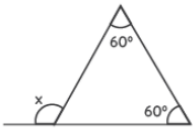
(i)



(ii)



(iii)



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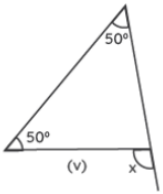

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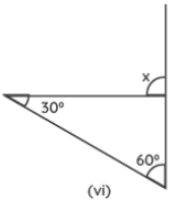

(vi)

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