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**EXERCISE 6.1 - Question No. 1**

In  $\triangle PQR$ ,  $D$  is the mid-point of  $\overline{QR}$ . then  $\overline{PM}$  is \_\_\_\_\_,

$PD$  is \_\_\_\_\_. Is  $QM = MR$ ?

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**EXERCISE 6.2 - Question No. 1**

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

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**EXERCISE 6.2 - Question No. 2**

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

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**EXERCISE 6.3 - Question No. 1**

Find the value of the unknown  $x$  in the following diagrams:

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**EXERCISE 6.3 - Question No. 2**

Find the values of the unknowns  $x$  and  $y$  in the following diagrams

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#### EXERCISE 6.4 - Question No. 1

Is it possible to have a triangle with the following sides? (i) 2 cm, 3 cm, 5 cm (ii) 3 cm, 6 cm, 7 cm (iii) 6 cm, 3 cm, 2 cm

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#### EXERCISE 6.4 - Question No. 2

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 6.4 - Question No. 3**

$AM$  is a median of s triangle  $ABC$ . Is

$AB + BC + CA > 2AM$ ? (Consider the sides of triangles  $\triangle ABM$  and  $\triangle AMC$ ).

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**EXERCISE 6.4 - Question No. 4**

$ABCD$  is a quadrilateral. Is

$AB + BC + CD + DA > AC + BD$ ?

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**EXERCISE 6.4 - Question No. 5**

$ABCD$  is quadrilateral. Is

$$AB + BC + CD + DA < 2(AC + BD)?$$

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**EXERCISE 6.4 - Question No. 6**

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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**EXERCISE 6.5 - Question No. 1**

$PQR$  is a triangle right angled at  $P$ . If

$PQ = 10\text{cm}$  and  $PR = 24\text{cm}$ , find  $QR$

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**EXERCISE 6.5 - Question No. 2**

$ABC$  is a triangle right angled at  $C$ . If

$AB = 25\text{cm}$  and  $AC = 7\text{cm}$ , find  $BC$ .

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**EXERCISE 6.5 - Question No. 3**

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

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#### EXERCISE 6.5 - Question No. 4

Which of the following can be the sides of a right triangle? (i) 2.5 cm, 6.5 cm, 6 cm. (ii) 2 cm, 2 cm, 5 cm. (iii) 1.5 cm, 2 cm, 2.5 cm.

In the case of right-angled triangles, identify the right angles.

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#### EXERCISE 6.5 - Question No. 5

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

Find the original height of the tree

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#### EXERCISE 6.5 - Question No. 6

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

$$PQ^2 + RP^2 = QR^2 \quad \text{(iii) } RP^2 + QR^2 = PQ^2$$

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#### EXERCISE 6.5 - Question No. 7



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

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### EXERCISE 6.5 - Question No. 8

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

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### SOLVED EXAMPLES - Question No. 1

Find angle  $x$  in Fig 6.11.

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### SOLVED EXAMPLES - Question No. 2

In the given figure (Fig 6.18) find  $m\angle P$ .

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### SOLVED EXAMPLES - Question No. 3

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

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### SOLVED EXAMPLES - Question No. 4

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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#### **SOLVED EXAMPLES - Question No. 5**

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

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#### **SOLVED EXAMPLES - Question No. 6**

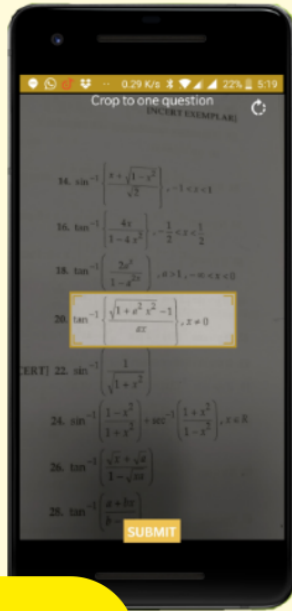
$\Delta ABC$  is right-angled at  $C$ . If  $AC = 5\text{cm}$  and  $BC = 12\text{cm}$

find the length of  $AB$ .

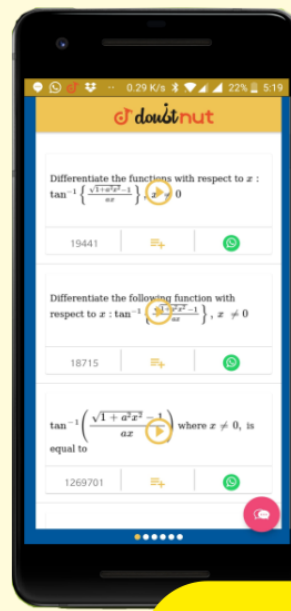
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