



MATHS

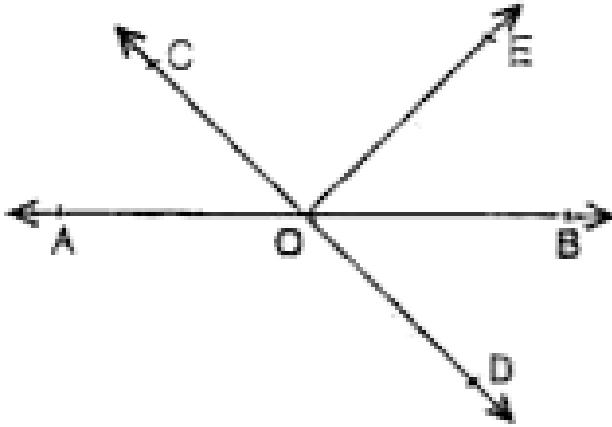
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LINES AND ANGLES

Exercise 6 1

1. In Fig., lines AB and CD intersect at O . If $\angle AOC + \angle BOE = 70^\circ$ and $\angle BOD = 40^\circ$,

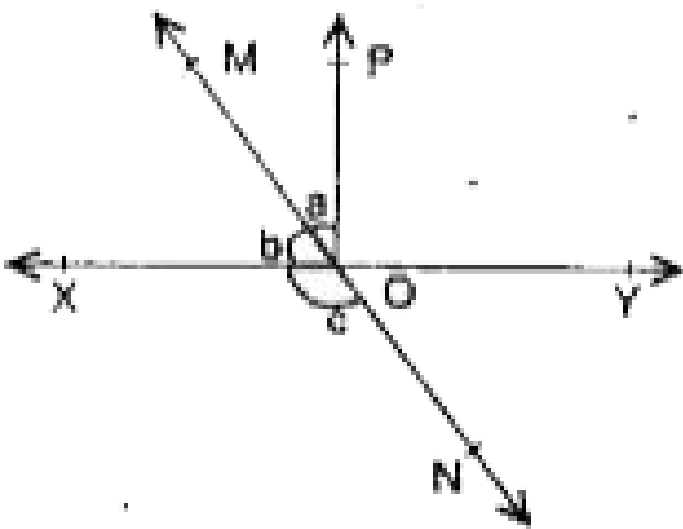
find $\angle BOE$ and reflex $\angle COE$.



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2. In Fig., lines XY and MN intersect at O.

$\angle POY = 90^\circ$ and $a : b = 2 : 3$, find c.

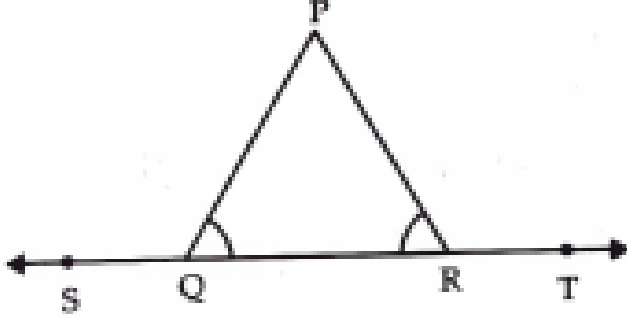


...(Linear pair axiom)



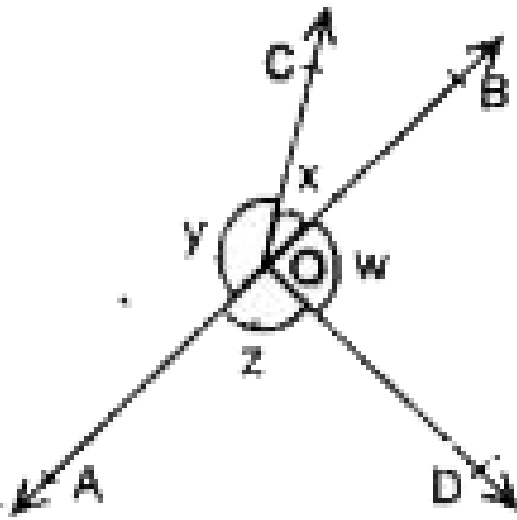
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3. In fig. lines $\angle PQR = \angle PRQ$, then prove that $\angle PQS = \angle PRT$



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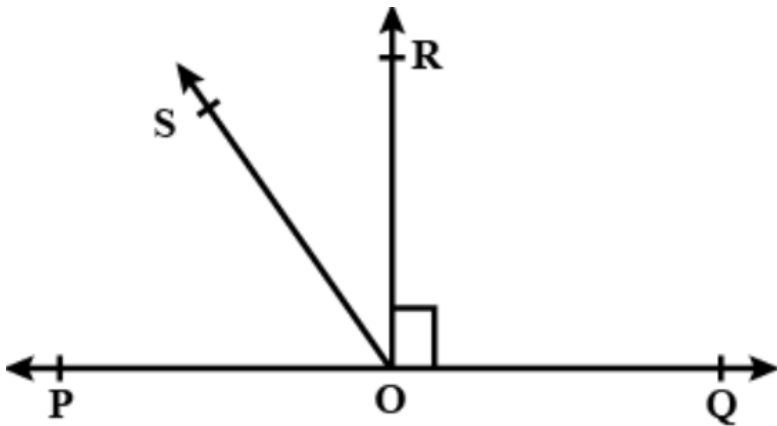
4. In Fig., if $x + y = w + z$, then prove that AOB is a line.



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5. In Fig. 6.17, POQ is a line. Ray OR is perpendicular to line PQ . OS is another ray lying between rays OP and OR . Prove that

$$\angle ROS = \frac{1}{2}(\angle QOS - \angle POS).$$



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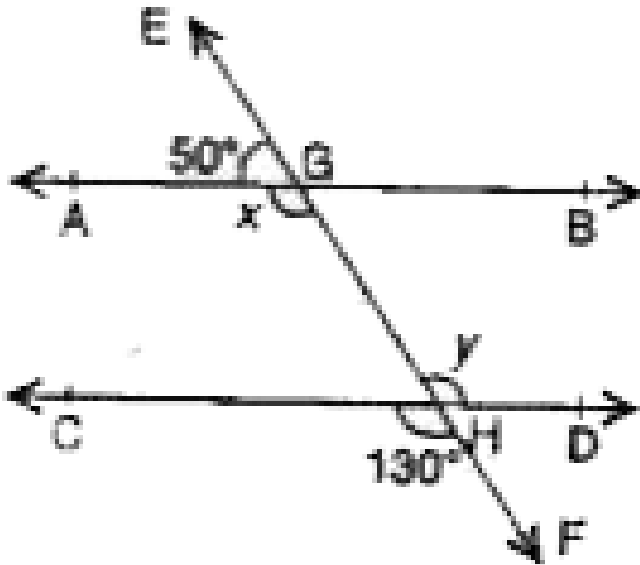
6. It is given that $\angle XYZ = 64^\circ$ and XY is produced to point P . Draw a figure from the given information. If ray YQ bisects $\angle ZYP$, find $\angle XYQ$ and reflex $\angle QYP$.



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Exercise 6 2

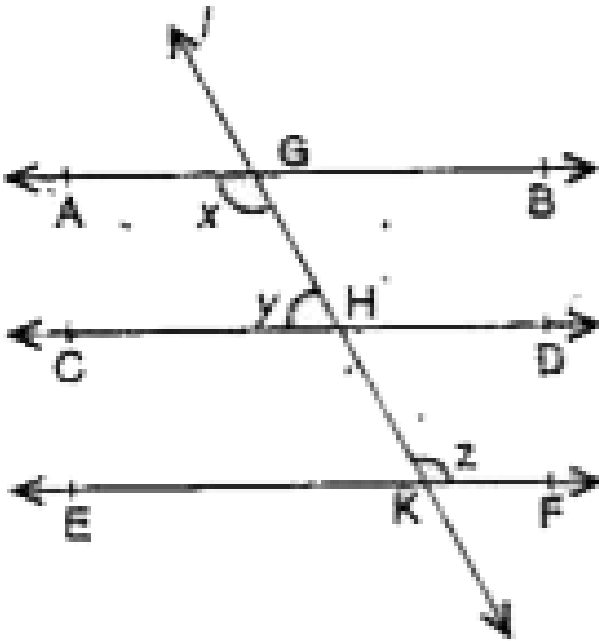
1. In Fig., find the values of x and y and then show that $AB \parallel CD$.



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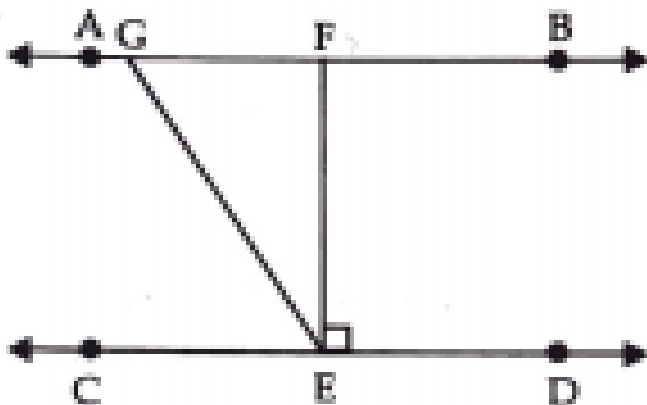
2. In Fig., if $AB \parallel CD$, $CD \parallel EF$ and $y : z = 3 : 7$,

find x



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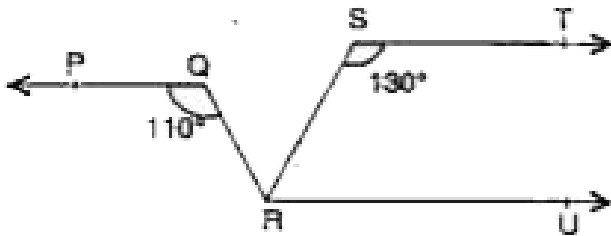
3. In fig. $AB \parallel CD$, $EF \perp CD$ and $\angle GED = 126^\circ$, find $\angle AGE$, $\angle GEF$ and $\angle FGE$



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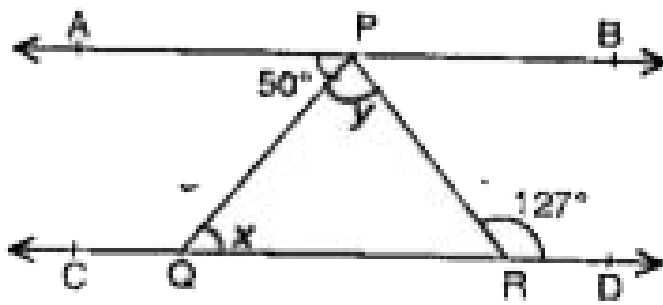
4. In Fig., $PQ \parallel ST$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, find $\angle QRS$.

Hint : Draw a line parallel to ST through point R .



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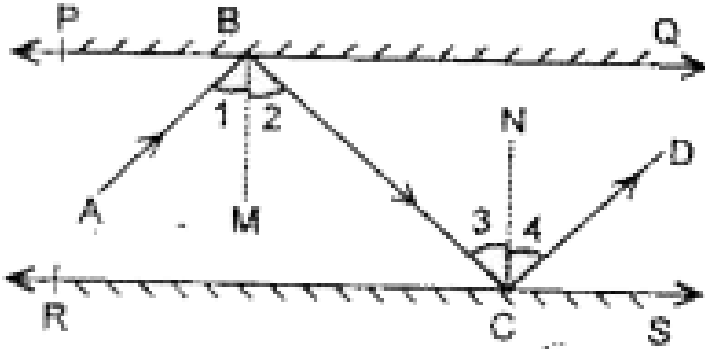
5. In Fig., $AB \parallel CD$, $\angle APQ = 50^\circ$ and $\angle PRD = 127^\circ$, find x and y .



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6. In Fig., PQ and RS are two mirrors placed parallel to each other. An incident ray AB strikes the mirror PQ at B, the reflected ray moves along the path BC and strikes the mirror RS at C and again reflects back along

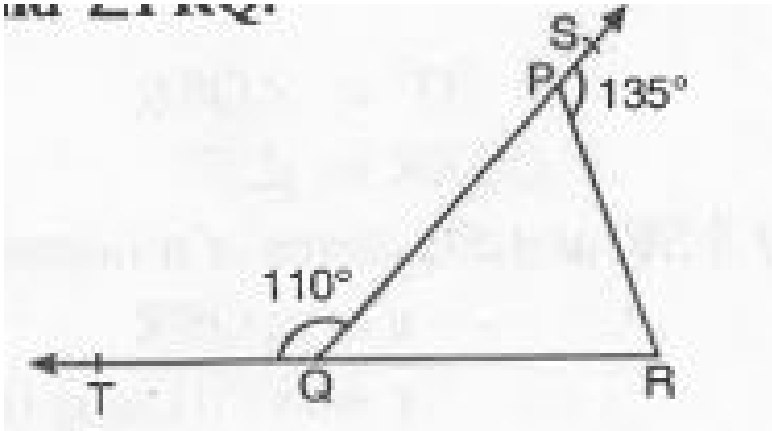
CD. Prove that $AB \parallel CD$.



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Exercise 6 3

1. In the given fig.

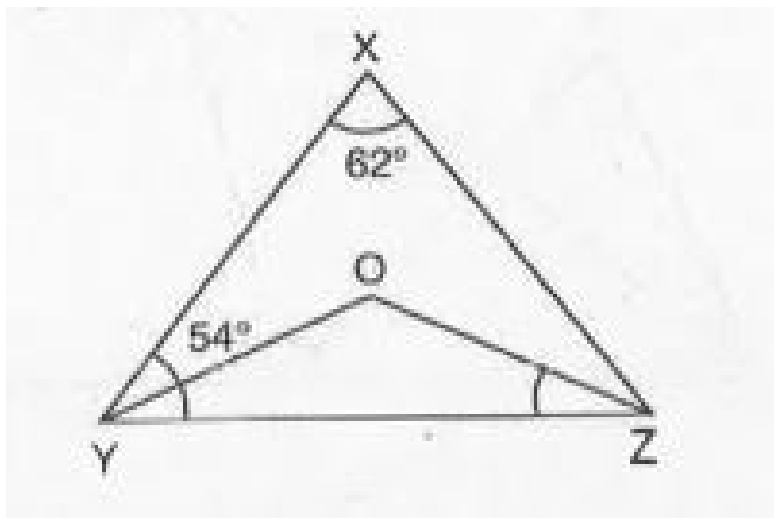


, sides
QP and RQ of $\triangle PQR$ are produced to points S
and T respectively. If $\angle SPR = 135^\circ$ and
 $\angle PQT = 110^\circ$, find $\angle PRQ$.



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2. In the given fig.

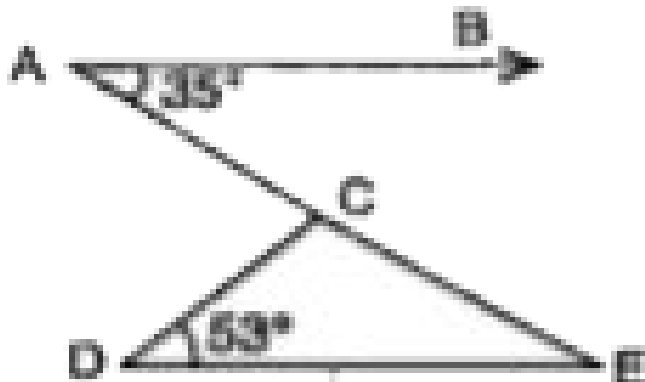


$\angle X = 62^\circ$, $\angle XYZ = 54^\circ$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$ respectively of $\triangle XYZ$, find $\angle OZY$ and $\angle YOZ$.



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3. In Fig., if $AB \parallel DE$, $\angle BAC = 35^\circ$ and $\angle CDE = 53^\circ$, find $\angle DCE$.

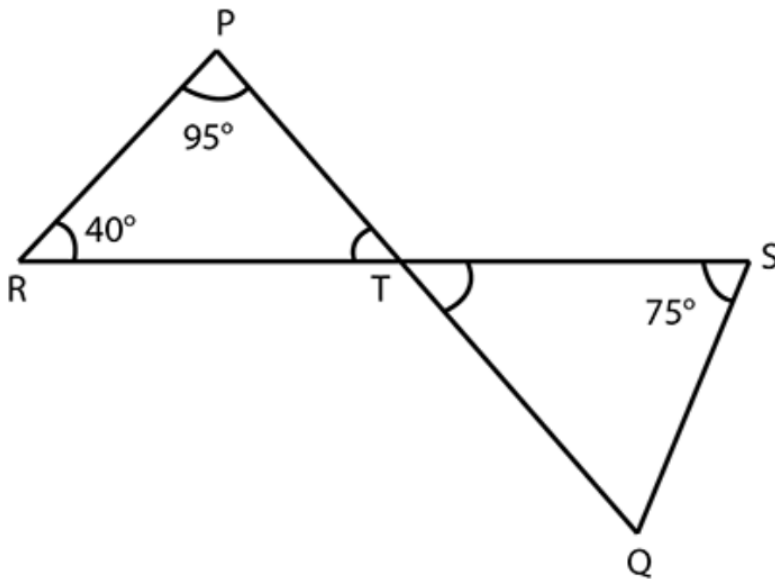


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4. In Fig. 6.42, if lines PQ and RS intersect at point T, such that

$\angle PRT = 40^\circ$, $\angle RPT = 95^\circ$ and $\angle TSQ = 75^\circ$

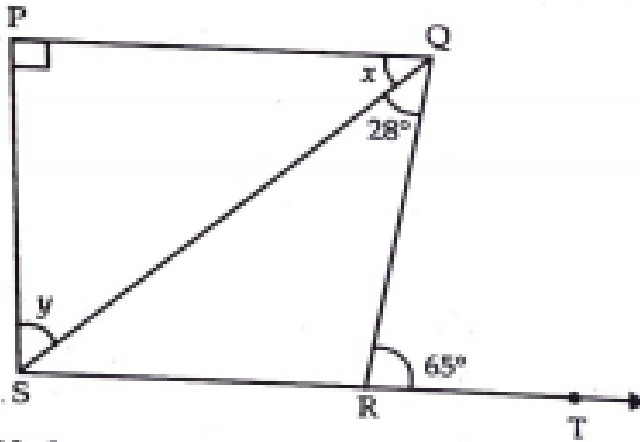
, find $\angle SQT$.



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5. In fig. $PQ \perp PS, PQ \parallel SR,$
 $\angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$ then find

the values of x and y



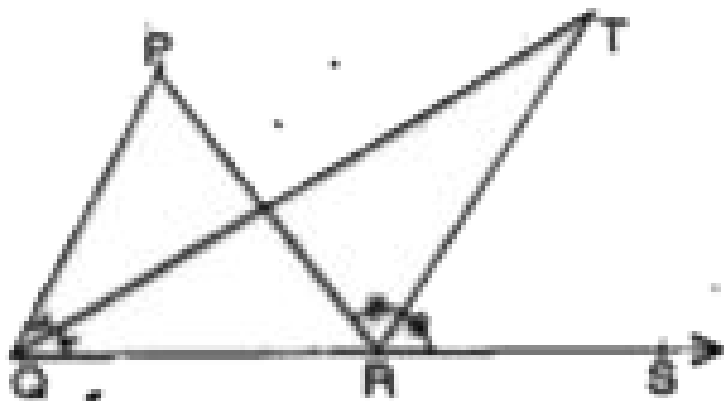
ii. We know that



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6. In Fig., the side QR of $\triangle PQR$ is produced to a point S . If the bisectors of $\angle PQR$ and $\angle PRS$ meet at point T , then prove that

$$\angle QTR = \frac{1}{2} \angle QPR.$$



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Objective Type Questions Fill In The Blanks

1. If two or more than two points lie on the same line, then we say that points are

.....



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2. A part of a line with two end points is called .

.....



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3. The two angles whose sum is 180° are called

.....



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4. The two angles whose sum is 90° are called .
..... angles.



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5. If two angles have a common ray (arm) these
angles are called angles .



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6. If sum of adjacent angles is 180° then angles are said to form a



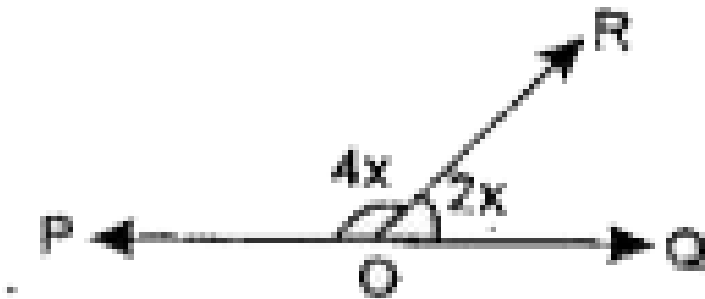
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7. If two lines intersect each other, then the ...
.....angles are equal.



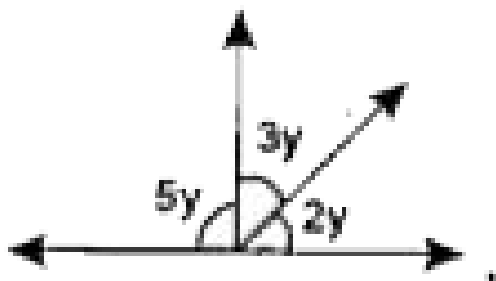
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8. In Fig. POQ is a line $\angle POR = 4x$ and $\angle QOR = 2x$. Then the value of x is



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9. In Fig., the value of y is



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Objective Type Questions State Whether The Following Statements Are True T Or False F

1. If two parallel lines are cut by a transversal then corresponding angles are equal.



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2. If two parallel lines are intersected by a transversal then alternate angles are equal.



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3. Two lines perpendicular to the same line are perpendicular to each other.



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4. Sum of the three angles of a triangle is 180°

.



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5. An exterior angle of a triangle is equal to the sum of the two interior opposite angles.



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6. If the angles of a triangle are in the ratio $2:3:4$, then the three angles are 60° , 90° , 120° .



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7. An exterior angle of a triangle is 115° and one the oppsite angles is 35° . Then the other oppsite interior angle is 60°



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8. All the angles of a triangle can be less than 60°



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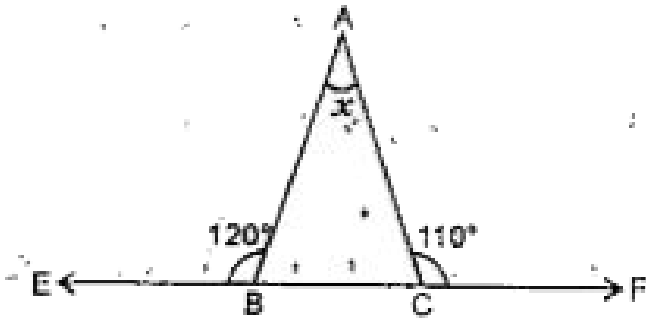
9. A triangle can have two obtuse angles



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Objective Type Questions Solve The Following Questions

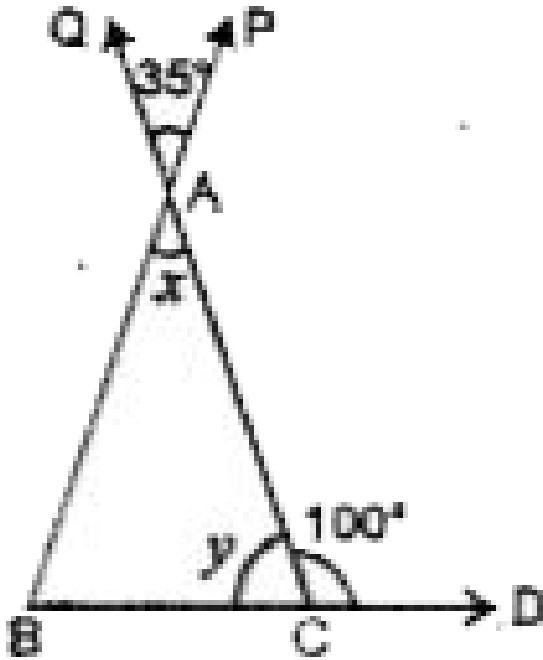
1. In Fig., find the value of x .



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2. Sides BC , CA and BA are produced to D , Q , P respectively as shown in Fig. If $\angle ACD = 100^\circ$, $\angle QAP = 35^\circ$, then find the

value of x and y .



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