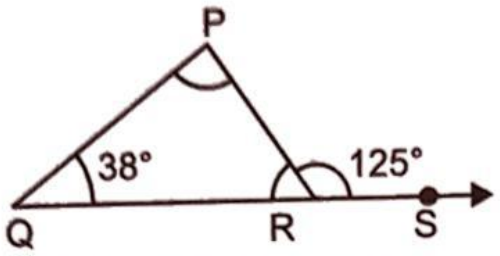
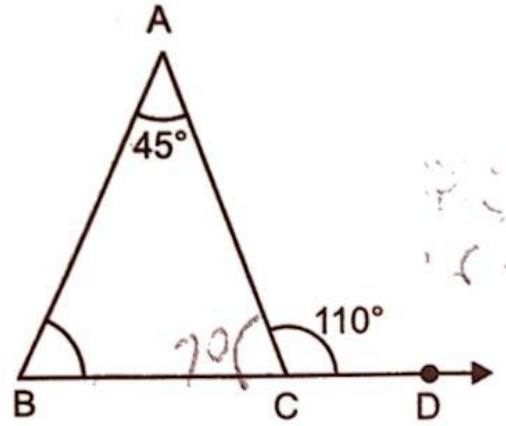
Exercise 12.6

1. An exterior angle of a triangle is equal to 125°. If one of the interior opposite angle is 38°, find the other two angles.

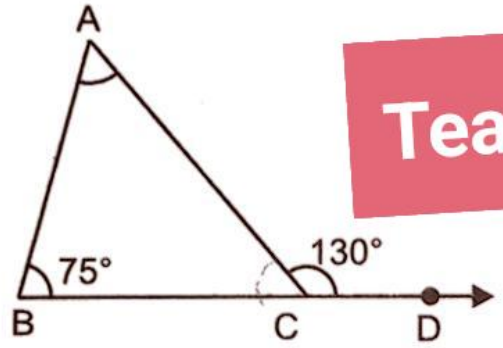


2. In the given figure, $\angle ACD = 110°$, $\angle BAC = 45°$. Then, $\angle ABC$ = ...



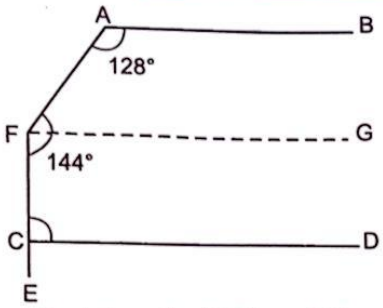
65°

3. In the given figure, $\angle ACD = 130°$, $\angle ABC = 75°$. Then $\angle BAC$ = ...

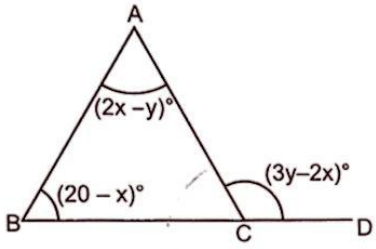


4. In the given figure, AB || FG || CD. FC is produced to E, $\angle FAB = 128°$, $\angle AFC = 144°$. Find

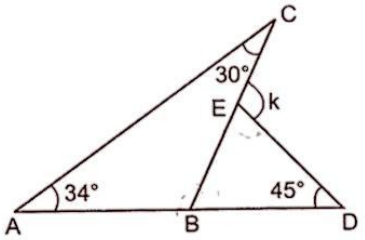
(*i*) $\angle GFC$ (*ii*) $\angle FCD$.



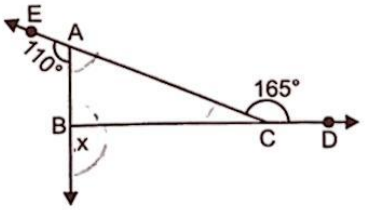
5. The interior angles of a triangle ABC and the exterior $\angle ACD$ are given as $(2x - y)°$, $(20 - x)°$, and $(3y - 2x)°$ respectively. Calculate y if $x = 10$. Hence, find the angles of the triangle and the exterior $\angle ACD$.



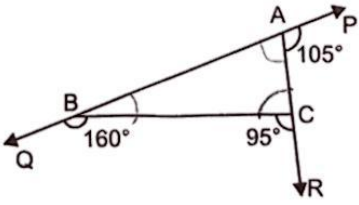
6. In the given figure, find the value of k.



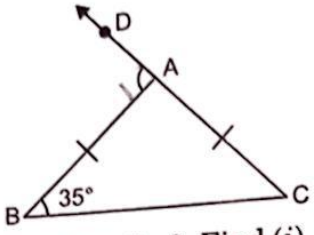
7. In the given figure, $\angle EAB = 110°$, $\angle ECD = 165°$, find x.



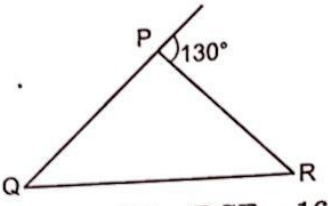
8. In the given figure, $\angle PAC = 105°$, $\angle RCB = 95°$, $\angle QBC = 160°$. Find $\angle BAC$, $\angle ABC$ and $\angle ACB$.



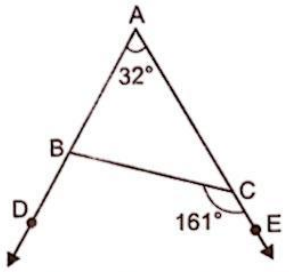
9. In the given figure, find ext. $\angle BAD$.



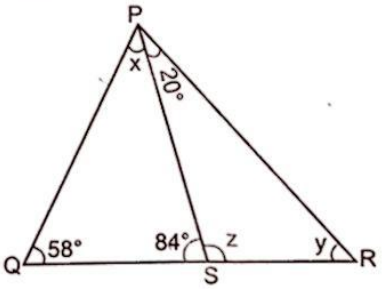
10. In the given figure, $\angle Q : \angle R = 2 : 3$. Find (i) $\angle Q$ (ii) $\angle R$.



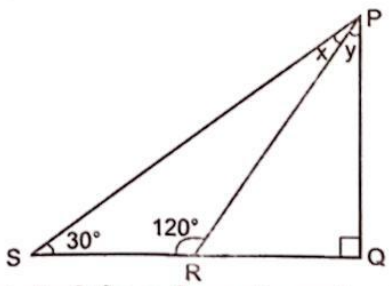
11. In the given figure, $\angle BAC = 32°$, $\angle BCE = 161°$, find $\angle ACB$, $\angle ABC$ and $\angle DBC$.



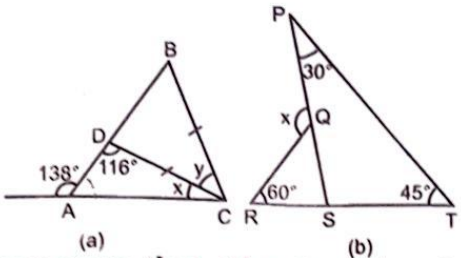
12. In the given figure, find the values of x, y and z.



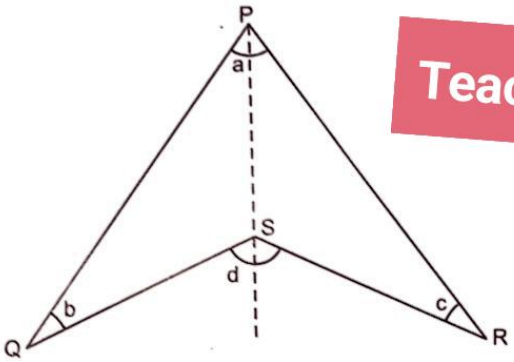
13. In the given figure, show that $\angle x = \angle y$.



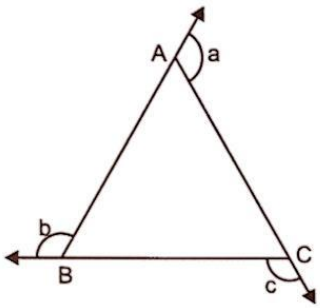
14. (i) In the figure (a), find the values of x and y. (ii) In the figure (b), find the value of x.



15. In the given figure, prove that $\angle d = \angle a + \angle b + \angle c$.

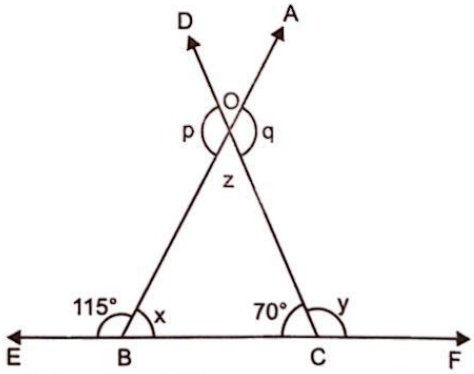


16. In the given figure, prove that $\angle a + \angle b + \angle c = 360°$.

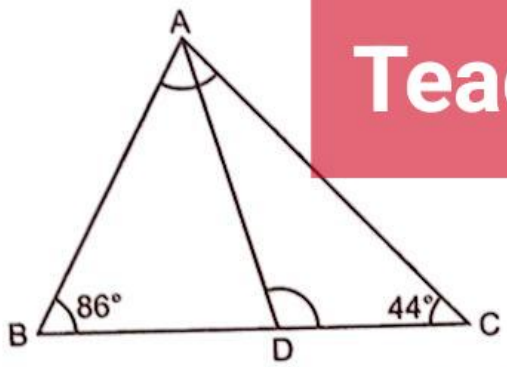


17. The side BC of a triangle ABC is produced to X and the internal bisector of $\angle A$ meets BC at Y. If $\angle ACX = 116°$ and $\angle AYC = 84°$, calculate $\angle ABC$.

18. In the given figure, find x, y, z, p, q.



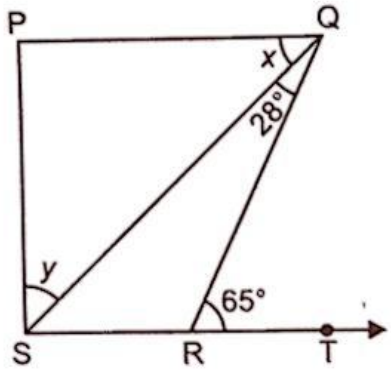
19. ABC is a triangle in which D is a point on BC such that $\angle ABD = 86°$, $\angle ACD = 44°$ and AD is the bisector of $\angle BAC$. Find $\angle ADC$.



20. The side BC of ΔABC is produced on both sides. Prove that the sum of the two exterior angles so formed is greater than $\angle A$ by $180°$.

[*CBSE* 2010]

21. In figure, if $PQ \perp PS$, $PQ \parallel SR$, $\angle SQR = 28°$ and $\angle QRT = 65°$, then find the values of x and y. [*CBSE* 2011]



Answers

1. $87°, 55°$ **2.** $\angle ABC = 65°$

3. $55°$

4. (*i*) $92°$ (*ii*) $88°$

5. $y = 12.5°$, $\angle A = 7.5°$, $\angle B = 10°$, Ext. $\angle ACD = 17.5°$, $\angle C = 162.5°$.

6. $k = 109°$ **7.** $85°$

8. $75°, 20°, 85°$ **9.** $70°$

10. $\angle Q = 52°$, $\angle R = 78°$

11. $\angle ACB = 19°$, $\angle ABC = 129°$, $\angle DBC = 51°$

12. $x = 38°$, $y = 64°$, $z = 96°$ **13.** $\angle x = \angle y = 30°$

14. (*a*) $x = 22°$, $y = 52°$ (*b*) $x = 135°$

17. $52°$

18. $x = 65°$, $y = 110°$, $z = 45°$, $p = q = 135°$

19. $\angle ADC = 111°$ **21.** $x = 37°$, $y = 53°$