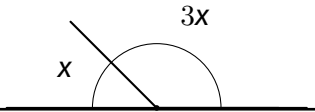
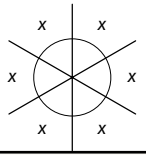
Combined Angle Problems

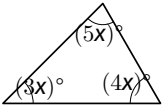
1. On a straight line, one angle is three times another. Find both angles.



2. Six angles around a point are equal. Find each angle.



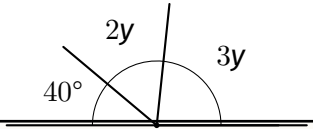
3. A triangle has angles $(3x)^\circ$, $(4x)^\circ$, and $(5x)^\circ$. Find x.



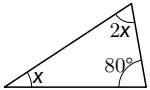
4. At a point, five angles are $(2x)^\circ$, $(x + 10)^\circ$, $(3x - 20)^\circ$, x°, and 60°. Find x.

Ratios & Multi-step Angles

5. A straight line has three angles. One is $40°$. The other two are in ratio $2 : 3$. Find them.

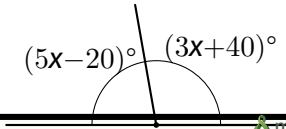


6. In a triangle, the largest angle is twice the smallest. The middle angle is $80°$. Find all angles.



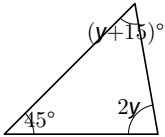
7. Four angles around a point are in ratio $3 : 4 : 5 : 6$. Find the difference between the largest and smallest.

8. Two straight lines intersect. If one angle is $(5x - 20)°$ and its adjacent angle is $(3x + 40)°$, find x.



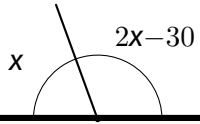
Multi-step Angle Applications

9. A triangle's angles are $45°$, $2y$, and $(y+15)°$. Find y and all angles.

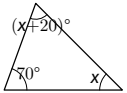


10. At a point, angles are in ratio $1:2:2:3:4:6$. Find the largest angle.

11. An angle on a line is $30°$ less than twice another. Find both angles.

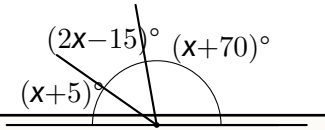


12. A triangle has one angle $70°$ and another is $20°$ more than the third. Find the other two angles.



Multi-step Angle Applications

13. Three angles on a straight line are $(x+5)^\circ$, $(2x-15)^\circ$, and $(x+70)^\circ$. Find x.



14. Two intersecting lines form an angle of $2x^\circ$. What is the sum of all four angles formed?

15. In triangle ABC, angle A is $\frac{2}{3}$ of angle B, and angle C is 50°. Find angles A and B.

16. Seven angles around a point increase by 5° each. Find the smallest angle.

Angle Reasoning & Proof

17. A triangle's exterior angle is 130°. If one remote interior angle is 50°, prove the other must be 80°.

18. On a line, angles are x°, $(180 - 2x)^\circ$, and x°. Find x if all angles are positive.