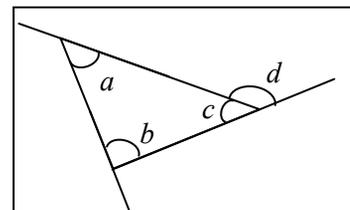


(2) Find unknown angles in triangles**Discussion**

Task 7, p. 85

You can have your student do this activity before looking at the textbook. Draw a triangle, cut it out, then trace around it on paper. Extend one side of the traced triangle. Have him tear off the opposite angles of the cut-out triangle and fit them in the exterior angle. Then have him look at the textbook.

See if your student can derive the property that the exterior angle of a triangle is equal to the sum of the interior opposite angles from the angle properties she already knows. Since the sum of the interior angles is 180° , then the sum of any two of the angles is the difference between 180° and the third angle. However, since the third angle and the exterior angle are on a straight line, the exterior angle is also the difference between 180° and the third angle. Therefore, the exterior angle is equal to the sum of the opposite interior angles.



$$\begin{aligned}\angle a + \angle b + \angle c &= 180^\circ \\ \angle a + \angle b &= 180^\circ - \angle c \\ \angle d &= 180^\circ - \angle c \\ \text{Therefore,} \\ \angle a + \angle b &= \angle d\end{aligned}$$

Practice

Tasks 8-9, p. 85

Activity

Give your student a copy of appendix p. a11. These are problems that require more than one step. Tell him that if he can't see right away how to solve this kind of problem, he should just start filling in any angle measurements he can determine. There are usually several different approaches. For example, in the first problem he can find the angle $\angle ACB$ since it is on a straight line next to the 72° angle. Or, he could remember the property that an exterior angle of a triangle is the sum of the opposite interior angles and find $\angle CAB$ first.

Workbook

Exercise 6, p. 79 (answers p. 97)

Reinforcement**Extra Practice**, Unit 10, Exercise 3, pp. 215-218**Test****Tests**, Unit 10, 3A and 3B, pp. 107-110

8. $\angle XZP = 84^\circ$

9. $\angle a = 90^\circ + 43^\circ = 133^\circ$
 $\angle b = 110^\circ - 50^\circ = 60^\circ$

Appendix p. a11 answers

- $\angle CAB = 72^\circ - 35^\circ = 37^\circ$ (ext. \angle of Δ)
 $\angle a = 180^\circ - 37^\circ = 143^\circ$ (\angle 's on st. line)
- $\angle FHE = 48^\circ$ (vert. opp. \angle 's)
 $\angle b + \angle b = 180^\circ - 48^\circ$
 $= 132^\circ$ (\angle sum of Δ)
 $\angle b = 132^\circ \div 2 = 66^\circ$
- $\angle NLM = 90^\circ - 32^\circ = 58^\circ$ (\angle 's in rt. \angle)
 $\angle c = 90^\circ - 58^\circ = 32^\circ$ (right Δ)