

Triangle & Exterior Angles

Geometry · Grade 8

◆ Medium · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

- Two parallel lines are cut by a transversal.
Name the relationship between corresponding angles.

Answer: _____

- Parallel lines l and m are cut by transversal t .
Angle $1 = 72^\circ$. Find the alternate interior angle.

Answer: _____

3. Parallel lines are cut by a transversal.

Co-interior angles (same-side interior) are 85° and $___\circ$.

Answer: _____

4. Lines a and b are parallel.

A transversal creates an angle of 110° with line a.

Find the corresponding angle with line b.

Answer: _____

5. A transversal crosses two lines.

If the lines are parallel and one angle is 67° ,

find the alternate exterior angle.

Answer: _____

6. Are two lines parallel if a transversal makes co-interior angles of 95° and 84° ?

Answer: _____

7. Lines m and n are parallel. A transversal makes one angle of 125° . Find the corresponding angle.

Answer: _____

8. A triangle has interior angles 80° and 50° . Find the exterior angle at the third vertex.

Answer: _____

9. Two parallel lines cut by a transversal. One angle is 53° . Find the co-interior angle.

Answer: _____

10. Alternate interior angles measure $(2x+15)^\circ$ and $(3x+5)^\circ$. Lines are parallel. Find x .

Answer: _____

Answer Key Triangle & Exterior Angles — Medium

1. Corresponding angles are equal.

When lines are parallel, corresponding angles (same position at each intersection) are equal.

2. 72°

Alternate interior angles are equal when lines are parallel.

3. 95°

Co-interior (consecutive interior) angles are supplementary: $85^\circ + ? = 180^\circ$. $? = 95^\circ$.

4. 110°

Corresponding angles are equal: both = 110° .

5. 67°

Alternate exterior angles are equal when lines are parallel.

6. No. Parallel lines need co-interior angles summing to 180° . $95^\circ + 84^\circ = 179^\circ \neq 180^\circ$.

Co-interior angles must sum to exactly 180° for lines to be parallel. $95 + 84 = 179 \neq 180$, so not parallel.

7. 125°

Corresponding angles are equal: 125° .

8. 130°

Exterior = sum of remote interior angles = $80^\circ + 50^\circ = 130^\circ$.

9. 127°

Co-interior angles are supplementary: $180^\circ - 53^\circ = 127^\circ$.

10. $x = 10$

Alternate interior equal: $2x + 15 = 3x + 5$. $x = 10$.