

Grade 8 · Angles, Parallel Lines and Triangles · Quiz

Common Core 8.G.A.5 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

Ten multiple-choice questions check triangle angle sums, exterior angles, angles formed by a transversal and the AA criterion. Each question has exactly one correct answer. Read the explanation to learn the typical mistake.

Grade 8 Common Core: 8.G.A.5

Questions

Question 1

Two angles of a triangle measure 38° and 74° . What is the third angle?

- A. 112°
- B. 142°
- C. 78°
- D. 68°

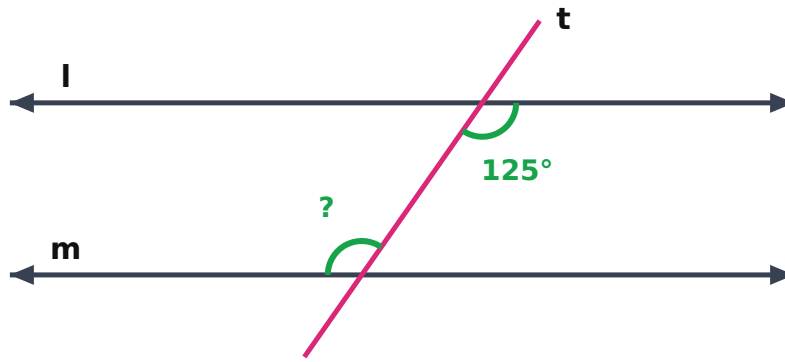
Question 2

The remote interior angles of a triangle measure 47° and 62° . What is the exterior angle?

- A. 71°
- B. 109°
- C. 133°
- D. 118°

Question 3

Lines l and m are parallel. What is the measure of the angle marked ?



Lines l and m are parallel.

- A. 55°
- B. 65°
- C. 235°
- D. 125°

Question 4

Two parallel lines are cut by a transversal. Same-side interior angles measure $(2x+10)^\circ$ and $(3x+20)^\circ$. What is x ?

- A. $x=30$
- B. $x=36$
- C. $x=20$
- D. $x=60$

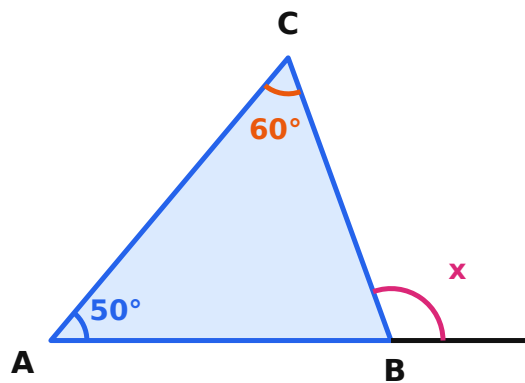
Question 5

Two parallel lines are cut by a transversal. Which pair of angles is always equal?

- A. Corresponding angles
- B. Same-side interior angles
- C. Angles that form a linear pair
- D. Angles that are next to each other along the transversal

Question 6

What is the measure of the exterior angle x ?



Triangle ABC .

- A. 70°
- B. 130°
- C. 120°
- D. 110°

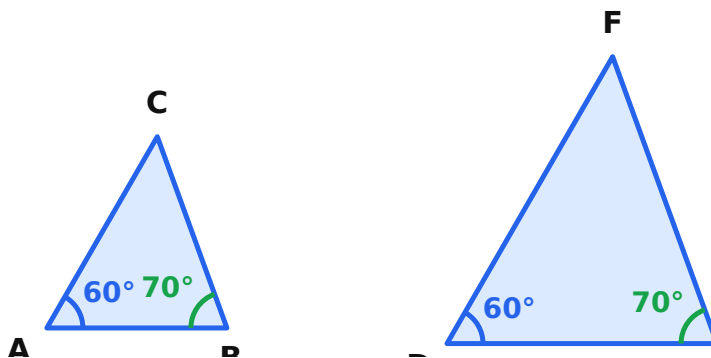
Question 7

Which pair of triangles must be similar?

- A. One has angles 40° and 80° ; the other has angles 40° and 70°
- B. One has angles 50° and 60° ; the other has angles 70° and 60°
- C. One has angles 50° and 60° ; the other has angles 60° and 80°
- D. One has angles 30° and 90° ; the other has angles 60° and 60°

Question 8

The triangles are similar. $AB = 6$, $BC = 8$ and $DE = 9$. What is EF ?



Triangles ABC and DEF .

- A. 11
- B. $\frac{16}{3}$
- C. 12

D. 18

Question 9

The angles of a triangle are in the ratio 2:3:4. What is the largest angle?

- A. 60°
- B. 90°
- C. 80°
- D. 72°

Question 10

Two parallel lines are cut by a transversal, and one of the eight angles measures 70° . How many of the eight angles measure 70° ?

- A. 4
- B. 2
- C. 6
- D. 8

Answer key

1. **D** - Subtract both angles from 180: $180 - 38 - 74 = 68$. The number 112 is the sum of the two angles, not the missing angle.
2. **B** - The exterior angle equals the sum of the remote angles: $47 + 62 = 109$. The value 71 is the third interior angle, $180 - 109$.
3. **D** - The marked angles are alternate interior angles, so they are equal. The value 55 would be the same-side interior angle.
4. **A** - Same-side interior angles add to 180: $5x + 30 = 180$, so $x = 30$. Forgetting the constants gives $5x = 180$ and $x = 36$.
5. **A** - Corresponding angles are equal when the lines are parallel. Same-side interior angles and linear pairs add to 180° instead.
6. **D** - The exterior angle equals $50 + 60 = 110$. The value 70 is the interior angle at B ; 130 and 120 each use only one remote angle.
7. **B** - The first pair has angle sets 50,60,70 and 70,60,50. In the other pairs one set has a third angle that the other lacks, so a single matching angle is not enough.
8. **C** - The scale factor is $9 \div 6 = \frac{3}{2}$, so $EF = 8 \cdot \frac{3}{2} = 12$. Adding 3 gives 11, and dividing by the factor gives $\frac{16}{3}$.
9. **C** - The parts total 9, so one part is $180 \div 9 = 20$ and the largest angle is $4 \cdot 20 = 80$. Dividing by 3 parts only gives 60.
10. **A** - The 70° angle is repeated by vertical and corresponding angles, four in all. The other four angles measure 110° .

Remember:

- Standard 8.G.A.5: angle sum, exterior angles, parallel lines with a transversal, and the AA criterion.
- Triangle angle sum: 180° .
- Exterior angle = sum of the two remote interior angles.
- Parallel lines: corresponding, alternate interior and alternate exterior angles are equal; same-side interior angles sum to 180° .
- AA criterion: two equal pairs of angles make triangles similar.