

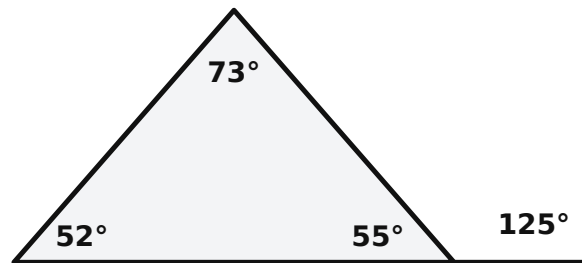
# Grade 8 - Angles in Triangles and Parallel Lines - Test Answer Key

Common Core 8.G.A.5 · maths-pdf.fr/en/

Use this answer key to score the angles in triangles and parallel lines test out of 20 points. Each solution shows the full work and a scoring guide, so partial credit can be given fairly when a student shows correct steps but makes an arithmetic slip.

**Grade 8** · Common Core State Standards: **8.G.A.5**

## Question 1 - Triangle angles [3 pts]



Third angle  $55^\circ$ , exterior angle  $125^\circ$ . Not drawn to scale.

$180 - 52 - 73 = 55$ . Exterior angle:  $52 + 73 = 125$ .

*Scoring: 1 point for the equation, 1 point for  $55^\circ$ , 1 point for  $125^\circ$ .*

## Question 2 - Solve for x [3 pts]

$6x = 180$ , so  $x = 30$ . Angles:  $30^\circ$ ,  $75^\circ$ ,  $75^\circ$ .

*Scoring: 1 point for the equation, 1 point for  $x$ , 1 point for the angles.*

## Question 3 - Parallel lines [3 pts]

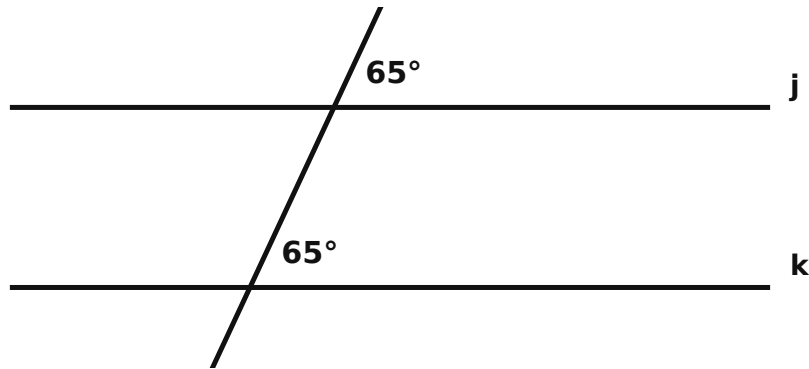
The angle at the lower crossing in the upper-right position is a corresponding angle to the  $58^\circ$  angle, so it is  $58^\circ$ .

The marked angle forms a linear pair with it:  $180 - 58 = 122$ .

**122°**

*Scoring: 1 point for 58°, 1 point for the linear pair, 1 point for 122°.*

#### Question 4 - Equation with angles [3 pts]



Both angles are  $65^\circ$  when  $x = 25$ .

Corresponding angles:  $2x+15=65$ , so  $x=25$ .

*Scoring: 1 point for the relationship, 1 point for the equation, 1 point for 25.*

#### Question 5 - Similar triangles [3 pts]

Triangle 1 third angle: 55. Triangle 2 third angle: 35. Both have angles 35, 55, 90, so they are similar (AA).

*Scoring: 1 point for each third angle, 1 point for the conclusion.*

#### Question 6 - Exterior angle [2 pts]

$$118 - 49 = 69.$$

*Scoring: 1 point for the theorem, 1 point for  $69^\circ$ .*

#### Question 7 - Linear pair [1 pt]

$$x + (3x - 20) = 180, \text{ so } 4x = 200 \text{ and } x = 50. \text{ The other angle is } 3 \cdot 50 - 20 = 130.$$

**50° and 130°**

*Scoring: 1 point for both angles.*

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| <b>Question 8 - Explain [2 pts]</b> |
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Two right angles add to  $180^\circ$ , leaving  $0^\circ$  for the third angle, which is impossible.

*Scoring: 1 point for the sum. 1 point for the conclusion.*

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| <b>Total</b>     |
| <b>20 points</b> |