

Grade 7 · Angle Relationships · Quiz

Common Core 7.G.B.5 · mathovore.fr

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

Take this ten-question multiple-choice quiz to practice angle relationships from Common Core standard 7.G.B.5. Each question has exactly one correct answer. The explanation after each question names the angle relationship and points out the most common mistake.

Grade 7 Common Core: 7.G.B.5

Questions

Question 1

What is the complement of 57° ?

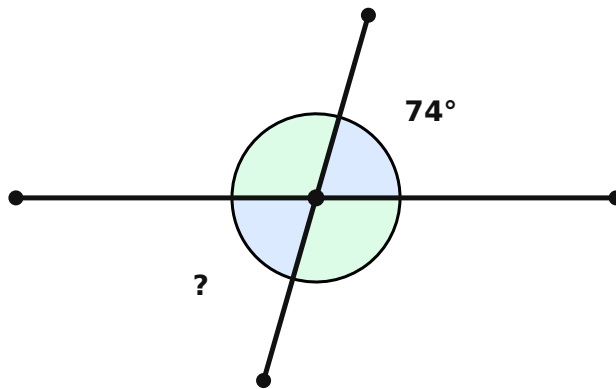
- A. 123°
- B. 147°
- C. 33°
- D. 57°

Question 2

What is the supplement of 112° ?

- A. 22°
- B. 78°
- C. 248°
- D. 68°

Question 3

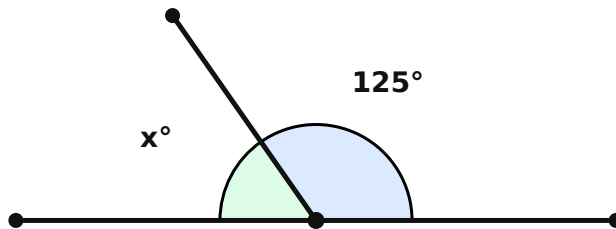


Quiz figure.

What is the measure of the angle marked ?

- A. 106°
- B. 16°
- C. 286°
- D. 74°

Question 4



Quiz figure.

What is the value of x ?

- A. 55°
- B. 35°
- C. 65°
- D. 235°

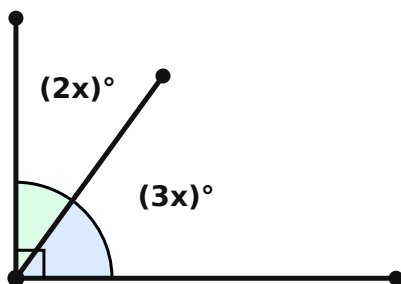
Question 5

Two complementary angles measure x° and $(x+20)^\circ$. What is x ?

- A. $x = 70$

- B. $x = 35$
- C. $x = 55$
- D. $x = 45$

Question 6



Quiz figure.

What is the value of x ?

- A. $x = 18$
- B. $x = 54$
- C. $x = 36$
- D. $x = 30$

Question 7

Two vertical angles measure $(3x+5)^\circ$ and $(5x-15)^\circ$. What is the measure of each angle?

- A. 10°
- B. 145°
- C. 35°
- D. 70°

Question 8

Which statement is always true?

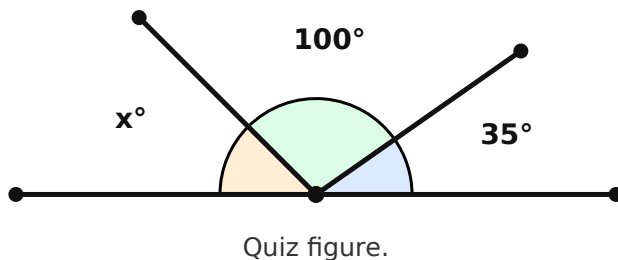
- A. Vertical angles add up to 180° .
- B. Vertical angles are equal in measure.
- C. Adjacent angles are equal in measure.
- D. Complementary angles add up to 180° .

Question 9

Two supplementary angles measure x° and $3x^\circ$. What is the smaller angle?

- A. 45°
- B. 135°
- C. 60°
- D. 90°

Question 10



What is the value of x ?

- A. 55°
- B. 80°
- C. 45°
- D. 145°

Answer key

1. **C** - Complementary angles add up to 90° : $90 - 57 = 33$. Choosing 123° comes from subtracting from 180° instead.
2. **D** - Supplementary angles add up to 180° : $180 - 112 = 68$. The value 248° comes from subtracting from 360° .
3. **D** - The marked angle is vertical to the 74° angle, and vertical angles are equal. The value 106° is the adjacent angle, not the opposite one.
4. **A** - The angles lie on a line, so $125 + x = 180$ and $x = 55$. Subtracting 90 from 125 gives 35, which uses the wrong total.
5. **B** - $x + x + 20 = 90$, so $2x = 70$ and $x = 35$. The value 55 is the larger angle, and 45 comes from splitting 90 in half.
6. **A** - $3x + 2x = 90$, so $5x = 90$ and $x = 18$. The value 54 is the measure of the angle $3x$, not x .
7. **C** - Vertical angles are equal: $3x + 5 = 5x - 15$, so $x = 10$, and each angle is $3(10) + 5 = 35$. The value 10 is only x .
8. **B** - When two lines cross, opposite (vertical) angles are equal. Supplementary pairs add to 180° , and complementary pairs add to 90° .
9. **A** - $x + 3x = 180$, so $x = 45$ and the angles are 45° and 135° . The 135° angle is the larger one.
10. **C** - The three angles add up to 180° : $35 + 100 + x = 180$, so $x = 45$. Using 90 instead of 180 gives 55.

Remember:

- Complementary angles add up to 90° .
- Supplementary angles add up to 180° .
- Vertical angles are equal in measure.
- Adjacent angles share a vertex and a side but do not overlap.
- To find an unknown angle, write an equation from the angle relationship and solve it.