

Grade 7 - Angle Relationships and Equations - Quiz

Common Core 7.G.B.5 · maths-pdf.fr/en/

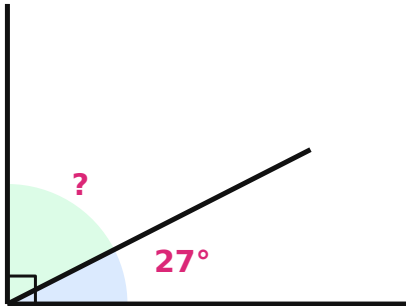
Name: _____ Class: _____ Date: ____/____/____

Answer all 10 multiple-choice questions on supplementary, complementary, vertical, and adjacent angles, and simple equations for an unknown angle. Pick the single best answer, then read the explanation to see why it is right and which common mistake each wrong choice shows. A score of 8 or more means you are ready for the test.

Grade 7 · Common Core State Standards: **7.G.B.5**

Questions

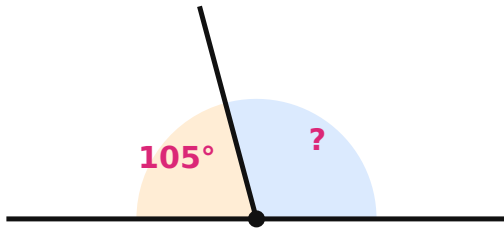
Question 1



What is the complement of a 27° angle?

- A. 153°
- B. 63°
- C. 27°
- D. 117°

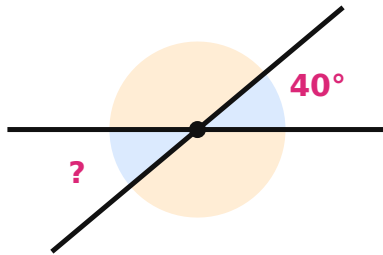
Question 2



What is the supplement of a 105° angle?

- A. 75°
- B. 15°
- C. 255°
- D. 105°

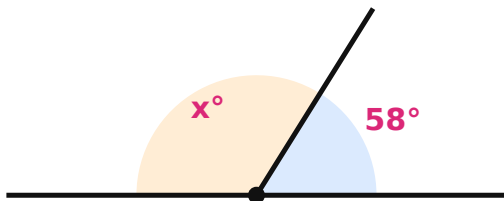
Question 3



Two lines cross and one angle is 40° . What is its vertical angle?

- A. 40°
- B. 140°
- C. 50°
- D. 320°

Question 4



Which equation finds x if angles of x and 58° are supplementary?

- A. $x+58=90$
- B. $x=58$
- C. $x+58=360$
- D. $x+58=180$

Question 5

Angles of $(2x+10)^\circ$ and 50° are vertical angles. What is x ?

- A. 20
- B. 15
- C. 30
- D. 40

Question 6

Three angles on a straight line are 60° , 45° , and x° . What is x ?

- A. 105°
- B. 75°
- C. 255°
- D. 15°

Question 7

Two complementary angles are in the ratio 1 : 2. What is the smaller angle?

- A. 45°
- B. 60°
- C. 30°
- D. 20°

Question 8

Angles around a point add up to:

- A. 180°
- B. 360°
- C. 90°
- D. 270°

Question 9

A linear pair has angles of x and $3x$. What is x ?

- A. 60°
- B. 30°
- C. 90°
- D. 45°

Question 10

Mei says two adjacent angles must be supplementary. Which diagram shows she is wrong?

- A. Two angles forming a straight line
- B. Two vertical angles
- C. Two adjacent angles inside a right angle
- D. Angles around a point

Answers

1. **B** - $90 - 27 = 63$. The value 153 is the supplement.
2. **A** - $180 - 105 = 75$.
3. **A** - Vertical angles are equal. The adjacent angles are 140.
4. **D** - Supplementary angles add to 180.
5. **A** - $2x + 10 = 50$, so $2x = 40$ and $x = 20$.
6. **B** - $60 + 45 + x = 180$, so $x = 75$.
7. **C** - $k + 2k = 90$, so $k = 30$.
8. **B** - A full turn is 360 degrees.
9. **D** - $x + 3x = 180$, so $4x = 180$ and $x = 45$.
10. **C** - Adjacent angles inside a right angle are complementary.

Remember

- Complementary angles add to 90° ; supplementary angles add to 180° .
- Angles on a straight line add to 180° ; angles around a point add to 360° .
- Vertical angles are equal.
- Adjacent angles share a vertex and a side.
- Write an equation from the relationship, solve it, and check the sum.