

Grade 7 - Drawing Triangles from Given Conditions - Quiz

Common Core 7.G.A.2 · maths-pdf.fr/en/

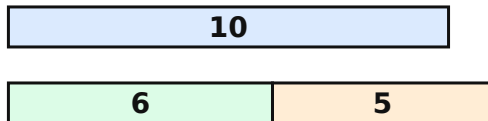
Name: _____ Class: _____ Date: ____/____/____

Answer all 10 multiple-choice questions on drawing triangles from given side lengths and angle measures, the triangle inequality, and when conditions give one triangle, many triangles, or none. 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.A.2**

Questions

Question 1



6 + 5 = 11 versus 10: Overlap: a triangle for

Which set of lengths can form a triangle?

- A. 5, 6, 10
- B. 2, 3, 6
- C. 4, 4, 8
- D. 1, 2, 4

Question 2

Two angles of a triangle are 45° and 85° . What is the third angle?

- A. 130°
- B. 40°
- C. 50°
- D. 90°

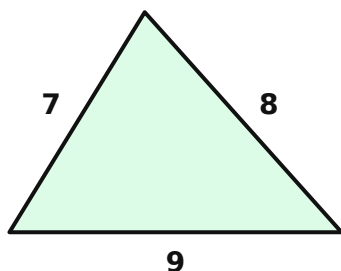
Question 3

Two sides of a triangle are 6 and 10. Which could be the third side?

- A. 3

- B. 8
- C. 4
- D. 16

Question 4



How many triangles have sides 7 in, 8 in, and 9 in?

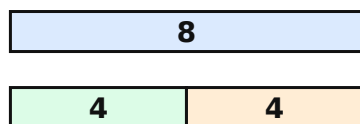
- A. None
- B. Two
- C. Infinitely many
- D. Exactly one

Question 5

Three angles of 30° , 60° , and 90° are given. How many triangles have them?

- A. Exactly one
- B. Infinitely many
- C. Exactly two
- D. None

Question 6



4 + 4 = 8 versus 8: Just reach: flat, no triangle

Sides 4 in, 4 in, and 8 in cannot make a triangle because:

- A. $4+8$ is less than 4
- B. all sides must be different
- C. $4+4$ is not greater than 8
- D. 8 is not a multiple of 3

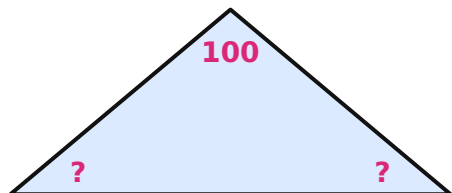
Question 7

Which condition gives exactly one triangle?

- A. Sides 6 in and 9 in with a 40° angle between them

- B. Angles of 40° , 60° , 80°
- C. A side of 6 in only
- D. Angles that add to 190

Question 8



An isosceles triangle has a top angle of 100° . What is each base angle?

- A. 40°
- B. 80°
- C. 50°
- D. 100°

Question 9

How many whole-number lengths can the third side be if two sides are 3 and 7?

- A. 3
- B. 5
- C. 4
- D. 10

Question 10

Priya says angles 100° , 50° , 40° make a triangle. What is wrong?

- A. They add to 150
- B. A triangle can't have an obtuse angle
- C. All three angles must be equal
- D. They add to 190, not 180

Answers

1. **A** - Only 5, 6, 10 satisfies $5+6=11>10$. The others fail or give exactly equal sums.
2. **C** - $180-45-85=50$. The value 130 is the sum of the other two.
3. **B** - The third side is greater than 4 and less than 16, so 8 works.
4. **D** - Three sides that satisfy the triangle inequality give exactly one shape and size.
5. **B** - The angles add to 180, and any size triangle can have them.
6. **C** - Two sides that add up exactly to the third lie flat.
7. **A** - Two sides and the angle between them fix the triangle.
8. **A** - $180-100=80$, and $80\div 2=40$.
9. **B** - The side is greater than 4 and less than 10: 5, 6, 7, 8, 9.
10. **D** - $100+50+40=190$.

Remember

- Triangle inequality: the sum of any two sides is greater than the third side.
- The angles of a triangle add up to 180° .
- Three fitting side lengths determine exactly one triangle.
- Three angles alone give many triangles of different sizes.
- Two sides and the angle between them determine exactly one triangle.