

Grade 7 - Drawing Triangles from Given Conditions - Test Answer Key

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

Use this answer key and scoring guide to grade the drawing triangles test. Each solution shows the full work, and the scoring note explains how the points are awarded. Give partial credit for correct steps even when the final answer is wrong.

Grade 7 · Common Core State Standards: **7.G.A.2**

Question 1 - Triangle inequality [2 pts]

A: $4+5=9>8$ yes.

B: $3+4=7<8$ no.

C: $6+6=12$ not greater than 12, so no.

Only set A

Scoring: 1 point for two correct decisions with checks; 1 point for all three.

Question 2 - Angle sum [2 pts]

$72+68+40=180$, yes.

$180-55-75=50$

Yes; 50°

Scoring: 1 point for each part.

Question 3 - How many triangles? [2 pts]

a. Exactly one: $5+6=11>7$.

b. More than one: no side is given.

c. None: $3+3=6<9$.

(a) one, (b) many, (c) none

Scoring: Half credit for two correct parts; full credit for three with reasons (round up).

Question 4 - Perimeter and range [2 pts]

Perimeter: $4+5+7=16$ in.

Third side: greater than $5-4=1$ and less than $4+5=9$.

16 in; between 1 in and 9 in

Scoring: 1 point for the perimeter; 1 point for the range.

Question 5 - Included angle [2 pts]

Draw the 7 cm side as a base. Use a protractor to draw 40° at one end. Mark 5 cm along the new ray and join the endpoints.

Two sides and the included angle give exactly one triangle.

Unique

Scoring: 1 point for the steps; 1 point for uniqueness.

Question 6 - Isosceles angles [2 pts]

$180-50-50=80$.

Many triangles of different sizes share these angles.

80° ; not unique

Scoring: 1 point for the angle; 1 point for the uniqueness reason.

Question 7 - Whole-number sides [2 pts]

Greater than $11-8=3$ and less than $8+11=19$: the values 4 through 18.

$18-4+1=15$

15

Scoring: 1 point for the range; 1 point for the count.

Question 8 - Stick kit [3 pts]

- a. $4+6=10>9$, so yes.
- b. $2+6=8<9$, so no.
- c. The stick must be longer than $9-6=3$, so 4 in.

9

6	2
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6 + 2 = 8 versus 9: Gap: the short sticks fall short

With a 2-inch stick, the sum 8 is less than 9.

Scoring: 1 point for each part.

Question 9 - Kite frame [3 pts]

- a. $10+10=20>15$, so yes.
- b. $10+10+15=35$ in.
- c. $10+10=20$ is not greater than 20, so no triangle.

20

10	10
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10 + 10 = 20 versus 20: Just reach: flat, no triangle

10 + 10 = 20 gives a flat line.

Scoring: 1 point for each part.

Total

20 points