

Geometry - Similar Triangle Theorems - Quiz

Common Core G-SRT.B.4, G-SRT.B.5 · maths-pdf.fr/en/

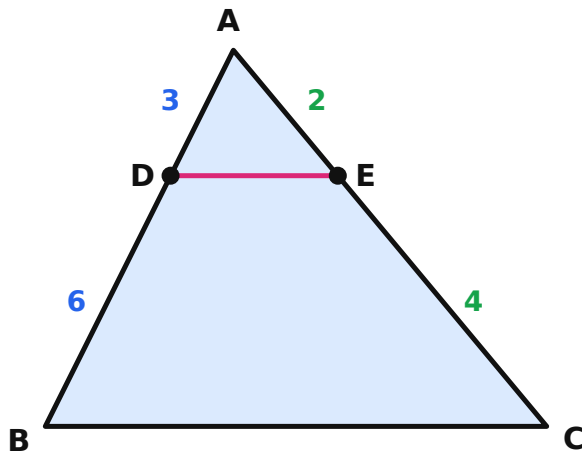
Name: _____ Class: _____ Date: ____/____/____

Test your understanding of similar triangles with this 10-question multiple-choice quiz. Each question has one correct answer, and the explanation after it names the typical mistake behind the wrong choices. Take it after the lesson or before the test.

Geometry · Common Core State Standards: **G-SRT.B.4, G-SRT.B.5**

Questions

Question 1



DE is parallel to BC. $AD = 3$, $DB = 6$ and $AE = 2$. What is EC?

- A. 1
- B. 6
- C. 9
- D. 4

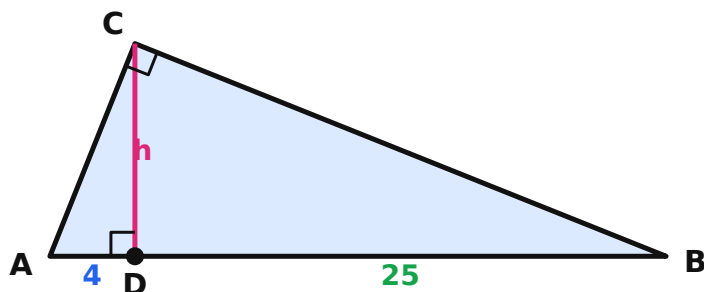
Question 2

Which test proves two triangles similar if two pairs of sides are proportional and the included angles are congruent?

- A. SAS~
- B. AA

- C. SSS~
- D. HL only

Question 3



The altitude to the hypotenuse splits the hypotenuse into 4 and 25. What is the altitude?

- A. 10
- B. 14.5
- C. 100
- D. 29

Question 4

What is the geometric mean of 2 and 8?

- A. 5
- B. 16
- C. 4
- D. 10

Question 5

Triangles with sides 3, 4, 5 and 9, 12, 16 are

- A. Similar with scale factor 3
- B. Not similar
- C. Congruent
- D. Similar by AA

Question 6

DE is parallel to BC in triangle ABC with $AD = 5$ and $AB = 15$. If $BC = 24$, what is DE ?

- A. 8

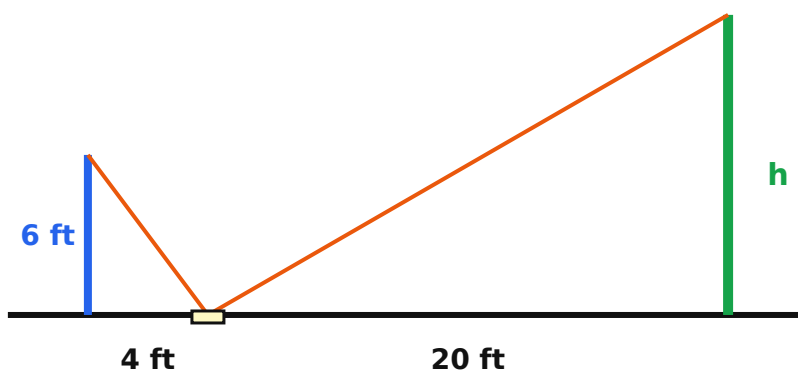
- B. 72
- C. 5
- D. 12

Question 7

In a right triangle the hypotenuse is 20 and a leg is 12. The altitude to the hypotenuse splits the hypotenuse into segments p and q , with p next to the 12 leg. What is p ?

- A. 8
- B. 7.2
- C. 16
- D. 14.4

Question 8



Reflection method: two similar right triangles.

Using the mirror method, with eye height 6, a distance of 4 to the mirror, and 20 from the mirror to the wall, how tall is the wall?

- A. 24
- B. 30
- C. 13.3
- D. 3.3

Question 9

Three parallel lines cut a transversal into segments of 4 and 6. On another transversal the first segment is 10. How long is the second?

- A. 4
- B. 6.67
- C. 12
- D. 15

Question 10

Two similar triangles have a scale factor of 3 : 2. If the larger has area 90, what is the area of the smaller?

- A. 60
- B. 30
- C. 40
- D. 135

Answers

1. **D** - $3/6 = 2/EC$ gives $EC = 4$. Using AD/AB would require AC , not EC .
2. **A** - That description is exactly SAS similarity.
3. **A** - $h^2 = 4 \times 25 = 100$, so $h = 10$. The number 100 is h^2 .
4. **C** - The square root of $2 \times 8 = 16$ is 4. The arithmetic mean would be 5.
5. **B** - $3x$ gives 9, 12 and 15, not 16, so the sides are not proportional.
6. **A** - The scale factor is $5/15 = 1/3$, so $DE = 24/3 = 8$.
7. **B** - $12^2 = p \times 20$, so $p = 144/20 = 7.2$. The other segment is 12.8.
8. **B** - The triangles are similar: $h/20 = 6/4$, so $h = 30$.
9. **D** - $4/6 = 10/x$ gives $x = 15$.
10. **C** - Areas are in the ratio 9 : 4, so the smaller is $90 \times 4/9 = 40$.

Remember

- Triangle Proportionality: DE parallel to BC gives $AD/DB = AE/EC$.
- Triangle similarity tests: AA, SAS~ and SSS~.
- Altitude to the hypotenuse: $h^2 = p \times q$.
- Leg relationship: $a^2 = p \times c$.
- Similar triangles let you measure heights and widths indirectly.