Mathematics

Practice Test Paper 7

(Chapter 6: Triangles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give reasons for geometrical statements where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. A triangle is reduced by a scale factor 0.4. Its original perimeter is 55 cm. Find the new perimeter.

(A) 13.75 cm (B) 22 cm
(C) 44 cm (D) 137.5 cm

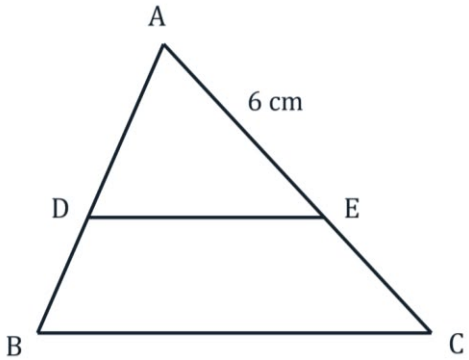
2. Which condition alone does not guarantee similarity of two triangles?

(A) Three proportional corresponding sides
(B) Two equal corresponding angles
(C) One equal angle
(D) Two proportional sides with equal included angles

3. If $\triangle RST \sim \triangle UVW$, which is the correct ordered correspondence?

(A) $R \leftrightarrow V, S \leftrightarrow U, T \leftrightarrow W$ (B) $R \leftrightarrow U, S \leftrightarrow W, T \leftrightarrow V$
(C) $R \leftrightarrow W, S \leftrightarrow V, T \leftrightarrow U$ (D) $R \leftrightarrow U, S \leftrightarrow V, T \leftrightarrow W$

4. DE ∥ BC in the diagram and AD : AB = 3 : 5. If AE = 6 cm, find EC.



(A) 4 cm (B) 6 cm
(C) 10 cm (D) 9 cm

5. All circles are similar because:

(A) All radii are equal

(B) All diameters are 1 cm

(C) One circle is obtained from another by uniform scaling

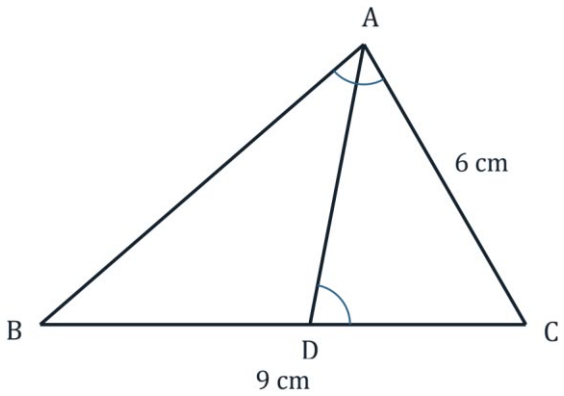
(D) Every circle is a polygon

SECTION B

(4 questions × 2 marks = 8 marks)

6. The sides around angle A of △ABC are 6 cm and 10 cm. The sides around angle P of △PQR are 9 cm and 15 cm. If ∠A = ∠P, identify a similarity criterion and state the side ratio.

7. D lies on BC in the diagram, and ∠ADC = ∠BAC. Find CD.



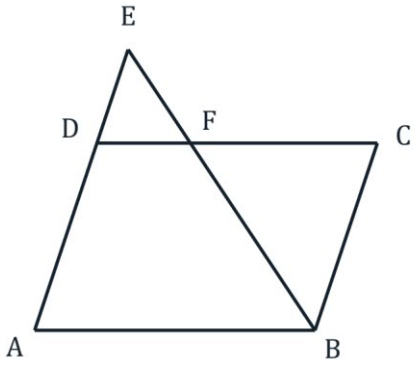
8. A student uses AB/DE = AC/DF and ∠B = ∠E to claim SAS similarity of △ABC and △DEF. Explain what is missing.

9. In △ABC, DE ∥ BC. If AE = 5 cm, EC = 7.5 cm and AB = 20 cm, find DB.

SECTION C

(3 questions × 3 marks = 9 marks)

10. ABCD is a parallelogram. E lies on AD produced beyond D, and BE meets CD at F. Prove that △ABE ~ △CFB.



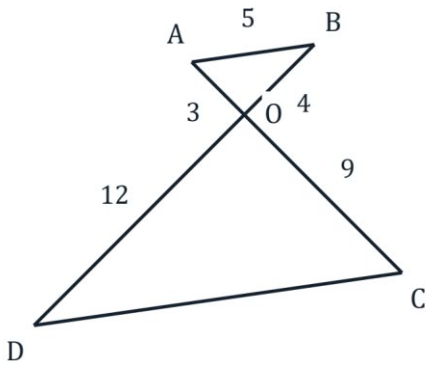
11. A 1.2 m child walks 8 m from the base of a 4.8 m lamp-post. Find the child's shadow length on level ground, using similar triangles.

12. $\triangle ABC \sim \triangle DEF$ with AB = 8 cm and DE = 12 cm. A median from A is 6 cm long and an altitude from B is 10 cm long. Find the corresponding median and altitude of $\triangle DEF$, giving a reason.

SECTION D

(Application Based Question - 3 marks)

13. Two straight braces AC and BD meet at O. A short crossbar AB is 5 m long. The labelled brace segments are in metres.



(i) Which criterion proves $\triangle AOB \sim \triangle COD$?

(ii) Find CD.

(iii) Find the total brace length BD.