TEST PAPER: MATHEMATICS

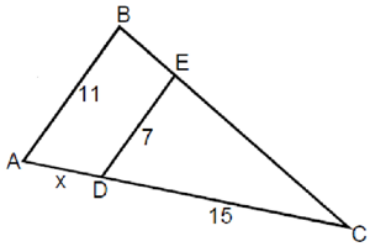
Time: 50 Minutes **Class:** 10th I.C.S.E.

Max. Marks: 30 Marks **Date:** 1st August, 2018

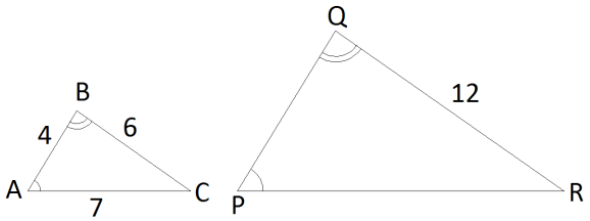
Marking Scheme: *Questions carry 10 marks each. Questions have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.*

Question 1:

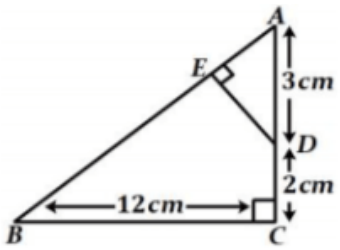
a. Given the shape shown by the figure beside. Find the length AD (x). Given: AB || DE and DC = 15 units.



b. Show that the two triangles given beside are similar and calculate the lengths of sides PQ and PR.

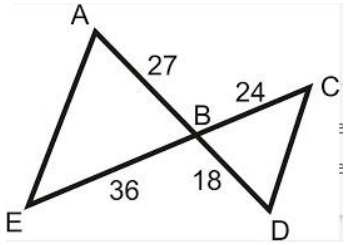


c. In figure below, ΔABC is right-angled at C and DE ⊥ AB. Prove that Δ ABC ∽ Δ ABE. Also find lengths of AE and DE.

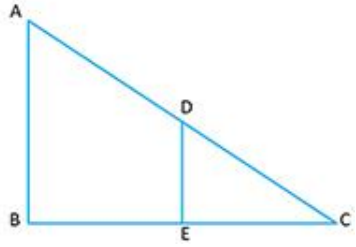


Question 2:

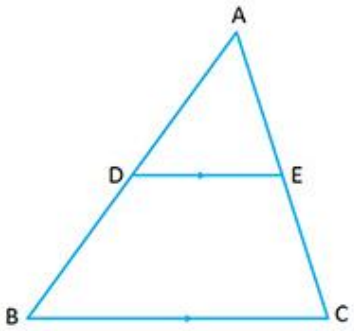
a. Prove that Δ AEB is similar to Δ DCB.



b. In the given figure, AB and DE are perpendicular to BC. If AB = 9 cm, DE = 3 cm and AC = 24 cm, calculate AD.



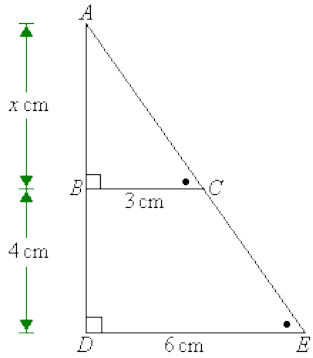
c. In the given figure DE ∥ BC.



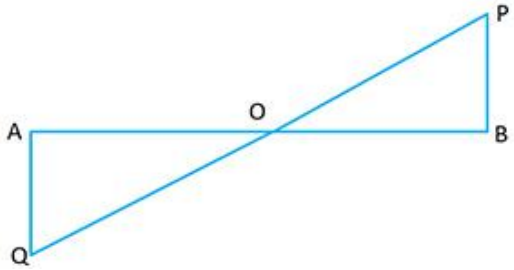
(i) Prove that Δ ADE and Δ ABC are similar.
(ii) Given that AD = BD/2, calculate DE, if BC=4.5 cm.

Question 3:

a. Find the value of the x in the following diagram.



b. In the figure given below, PB and QA are perpendiculars to the line segment AB. If PO = 6 cm and QO=9 cm, show that Δ POB ∽ Δ QOA.



c. In the given figure Δ ABC is a right-angled triangle with ∠BAC = 90°. Prove Δ ADB ∽ Δ CDA