Marking Scheme: *Three 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. Area of two similar triangles ABC and PQR are 25 cm^2 and 49 cm^2 respectively. $\Delta ABC \sim \Delta PQR$. If QR = 9.8 cm, find BC.

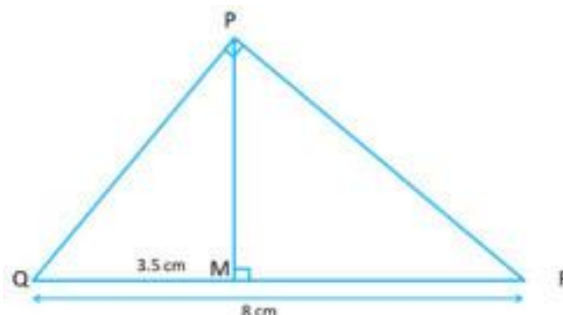b. In the given figure, AB and DE are perpendicular to BC. If AB = 9 cm, DE = 3 cm and AC = 24 cm, calculate AD.
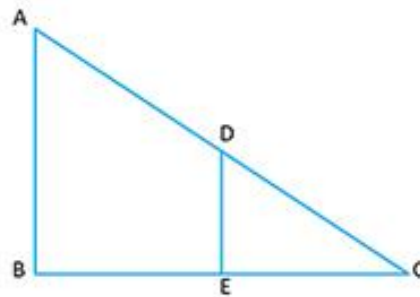
c. In the given figure DE ∥ BC.
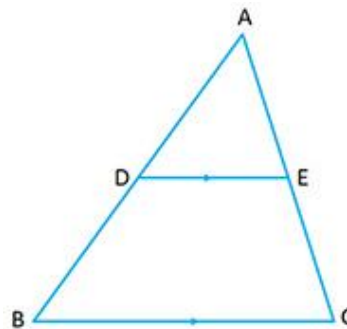
(i)   Prove that Δ ADE and Δ ABC are similar.
(ii)   Given that AD = BD/2, calculate DE, if BC=4.5 cm.

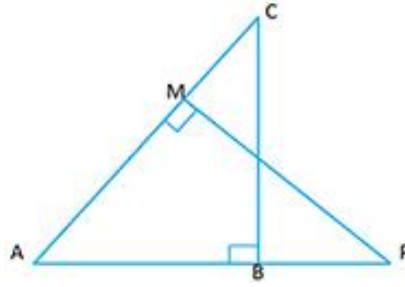## Question 2:

a. In the right angled Δ QPR, PM is the altitude. Given that QR = 8 cm and MQ = 3.5 cm, calculate the value of PR.

b. The difference between the two numbers is 7. Two times the smaller number added to the larger number gives 22. Find the two numbers.

c. In the given figure, Δ ABC and Δ AMP are right angled at B and M respectively. Given AC=10 cm, AP = 15 cm and PM= 12 cm
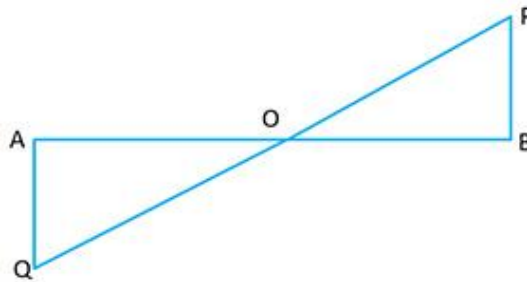

(i) Prove Δ ABC ∽ Δ AMP
(ii) Find AB and AC

Question 3:

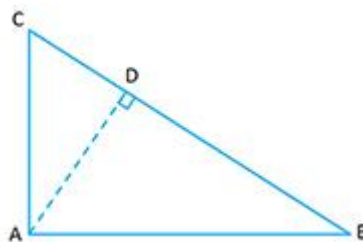a. Solve the following equations by reducing them to linear equations:
$$(4/y) + (3/x) = 8$$
$$(6/y) + (5/x) = 13$$

b. In the figure given below, PB and QA are perpendiculars to the line segment AB. If $PO = 6$ cm, $QO=9$ cm and area of Δ POB = 120 cm²,

(i) Show that Δ POB ∽ Δ QOA
(ii) Find the area of Δ QOA.

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

(i) Prove Δ ADB ∽ Δ CDA
(ii) If $BD = 18$ cm and $CD = 8$ cm, find AD
(iii) Find the ratio of the area of Δ ADB is to area of Δ CDA.