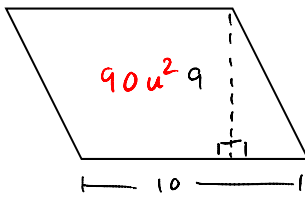
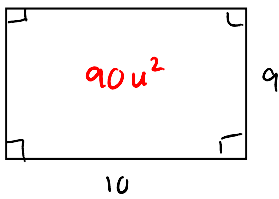
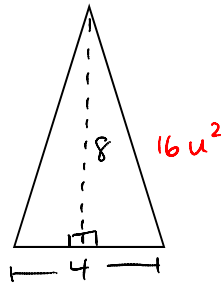
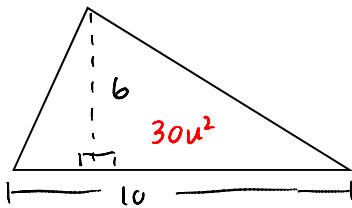


#1 a.



$$\frac{90}{90} \quad \boxed{1:1}$$

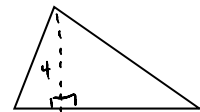
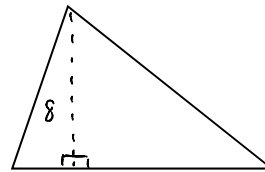
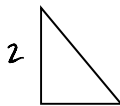
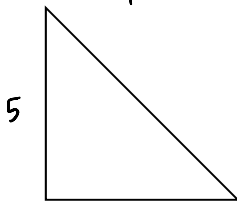
c.



$$\frac{30}{16} = \frac{15}{8} \quad \boxed{15:8}$$

#2 By using the Similar Figures Thm, find the ratio of the areas of each pair of similar figures

a.



$$\frac{A_1}{A_2} = \left(\frac{5}{2}\right)^2 = \frac{25}{4} \quad \boxed{25:4}$$

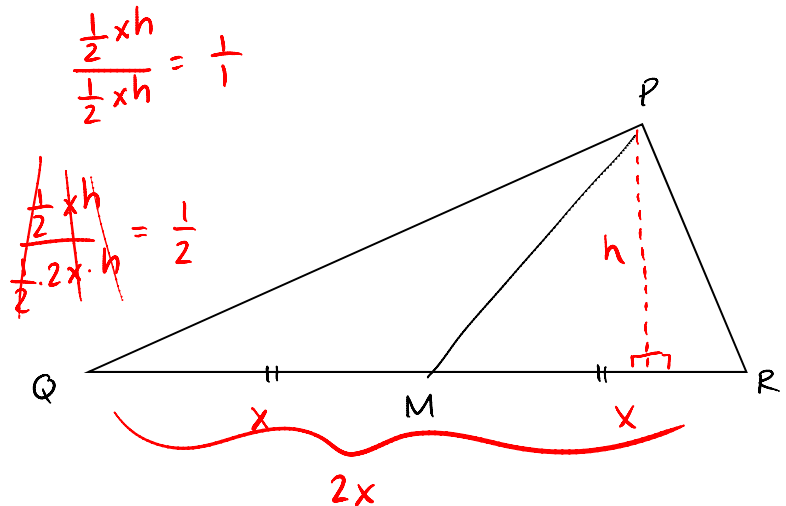
$$\frac{A_1}{A_2} = \left(\frac{8}{4}\right)^2 = \frac{64}{16} = \frac{4}{1} \quad \boxed{4:1}$$

#3 Given: \overline{PM} is a median

Find: a. $A_{\triangle PQM} : A_{\triangle PRM}$ $\boxed{1:1}$

b. $A_{\triangle PQM} : A_{\triangle PQR}$ $\boxed{1:2}$

c. $QR : MR$ $\boxed{2:1}$



#4 A pair of corresponding sides of two similar triangles are 4 and 9. Find the ratio of the triangles areas

$$\frac{A_1}{A_2} = \left(\frac{4}{9}\right)^2 = \frac{16}{81} \quad \boxed{16:81}$$

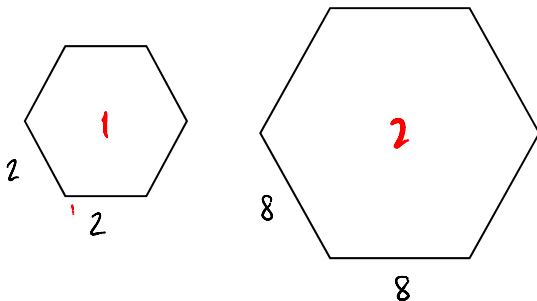
#5 If the ratio of the areas of 2 similar polygons is 9:16, find the ratio of a pair of corresponding altitudes.

$$\frac{S_1}{S_2} = \sqrt{\frac{9}{16}} = \frac{3}{4} \quad \boxed{3:4}$$

#6 Gladys Gardenia has a square garden, 3 m on a side. She wishes to make it exactly twice as large. Gladys decides to double the length and double the width - does she succeed?

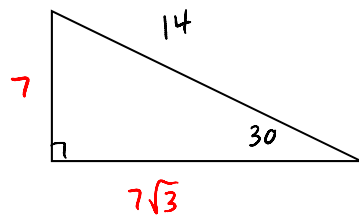
$$\begin{aligned} 3 \cdot 3 &= 9 \text{ m}^2 & \text{No, the new garden is} \\ 6 \cdot 6 &= 36 \text{ m}^2 & \text{4 times as Big.} \end{aligned}$$

#7



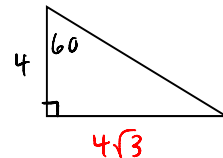
$$\frac{A_1}{A_2} = \left(\frac{2}{8}\right)^2 = \left(\frac{1}{4}\right)^2 = \frac{1}{16} \quad \boxed{1:16}$$

#8 Find the ratio of the areas of the triangles.



$$A = \frac{7\sqrt{3} \cdot 7}{2}$$

$$A = \frac{49\sqrt{3}}{2}$$

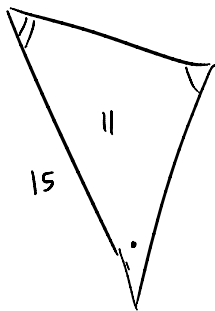
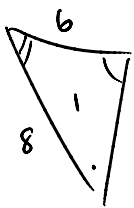


$$A = \frac{4\sqrt{3} \cdot 4}{2}$$

$$= \frac{16\sqrt{3}}{2}$$

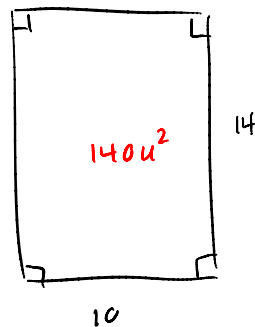
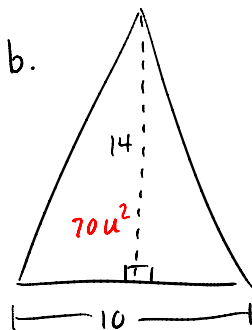
$$\boxed{49:16}$$

9



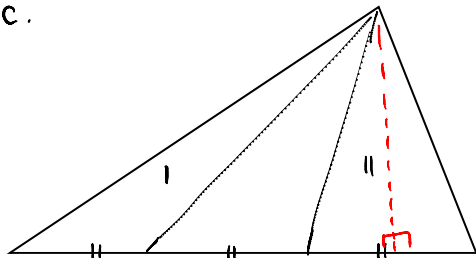
$$\frac{A_1}{A_2} = \left(\frac{8}{15}\right)^2 = \boxed{\frac{64}{225}}$$

b.



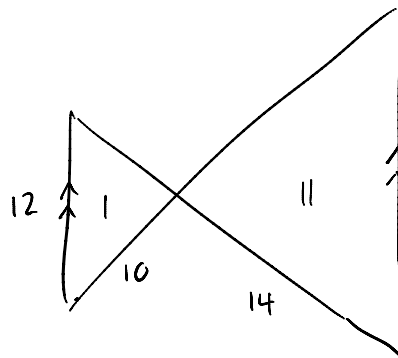
$$\frac{70}{140} = \frac{1}{2} \quad \boxed{1:2}$$

c.



$$\boxed{1:1}$$

d.

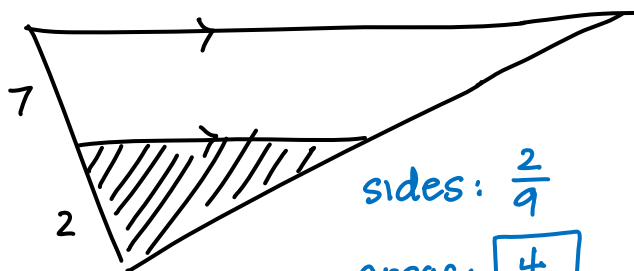


$$\left(\frac{12}{18}\right)^2 = \left(\frac{2}{3}\right)^2 = \frac{4}{9}$$

$$\boxed{4:9}$$

#10 Find the ratio of the area of the shaded triangle to that of the whole triangle

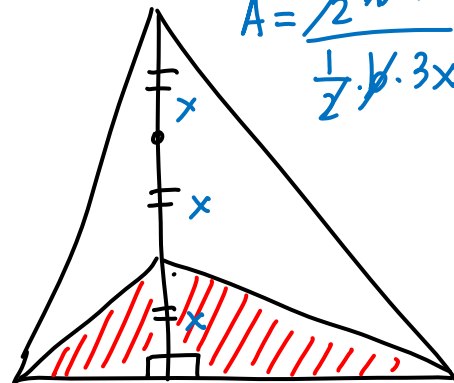
a.



$$\text{sides: } \frac{2}{9}$$

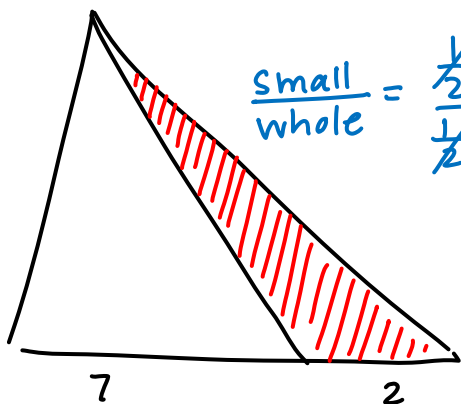
$$\text{areas: } \boxed{\frac{4}{81}}$$

c.

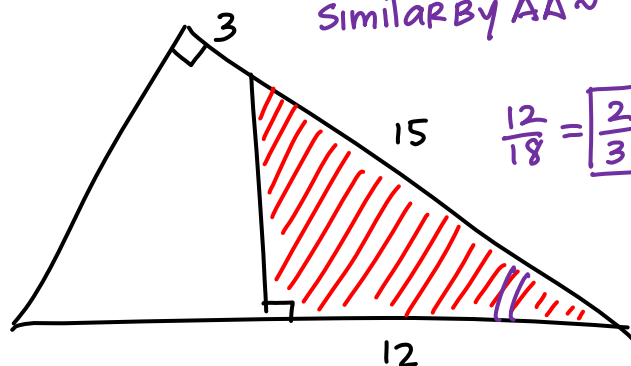


$$A = \frac{\frac{1}{2} \cdot 3 \cdot 12}{\frac{1}{2} \cdot 1 \cdot 4} = \boxed{\frac{1}{3}}$$

b.



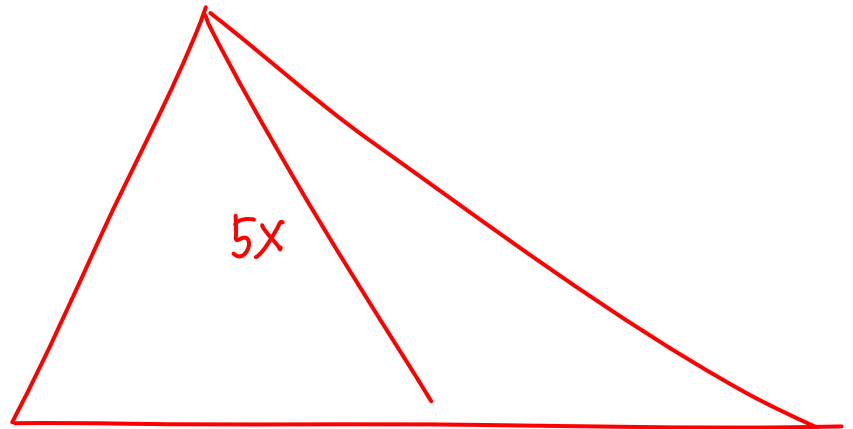
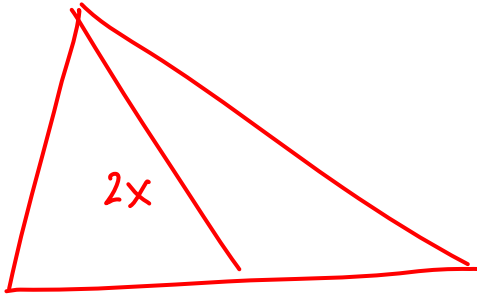
$$\frac{\text{small}}{\text{whole}} = \frac{\frac{1}{2} \cdot 2 \cdot 2}{\frac{1}{2} \cdot 7 \cdot 2} = \boxed{\frac{2}{9}}$$



Similar by AA ~

$$\frac{12}{18} = \boxed{\frac{2}{3}}$$

#13 The ratio of corresponding medians of 2 similar triangles is 5:2. Find the area of the larger triangle if the smaller triangle has an area of 40.



$$\left(\frac{2}{5}\right)^2 = \frac{40}{x}$$

$$\frac{4}{25} = \frac{40}{x}$$

$$4x = 1000$$

$$x = 250$$