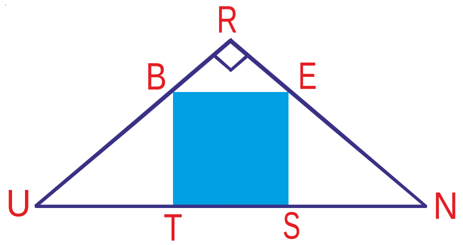
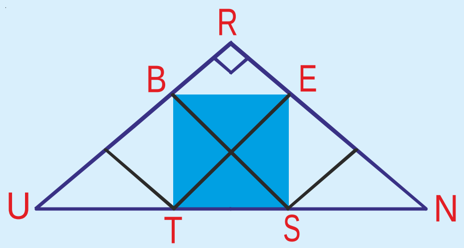
01

BEST is a square. Given that RUN is a right-angled isosceles triangle of area 81 cm², find the area of BEST.



Divide the triangle into 9 smaller triangles as follows



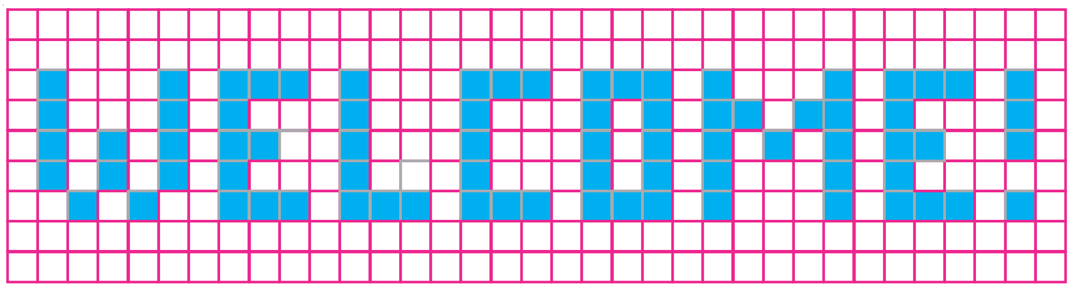
Area of one smaller triangle

$= 81 \div 9 = 9 \text{ cm}^2$

Hence, the area of square BEST = 9×4

$= 36 \text{ cm}^2$

02 **Hari is preparing a welcome banner for his elder brother who is coming home from abroad. Find the area covered by the letters. Use the given scale to help you with your computations. Answer the following questions below.**



a) What is the total area of the banner ?

b) What is the area covered by all the letters including the exclamation mark ?

c) What is the area of the white space ?

d) How did you get the area covered by the letters ?

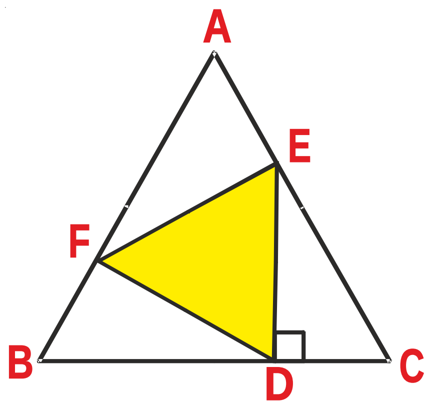
(a) Area of banner = 35 units × 9 units = 315 units^2

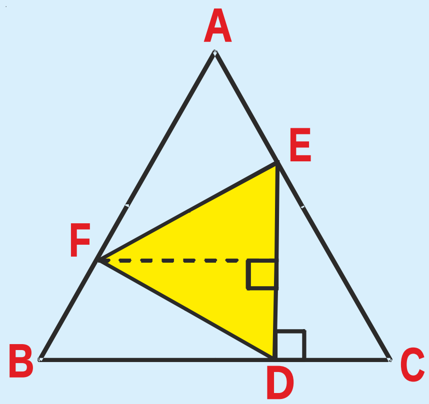
(b) Area covered by letters = 77 units^2

(c) Area of white space = 238 units^2

(d) By counting each sq. unit that is shaded

03 **An equilateral triangle DEF is inscribed in an equilateral triangle ABC as shown with ED perpendicular to BC. Find the ratio of the area of DDEF to the area of DABC.**





Divide ΔDEF in to 2 equal triangles

Hence, ΔABC has total 5 equal triangles

∴ Ratio of area of ΔDEF to the area of ΔABC = 2 : 5

04 **There are two ways to inscribe a square in a given right-angled isosceles triangle as shown in figures (i) and (ii). Find the ratio of the area of square X to the area of square Y.**

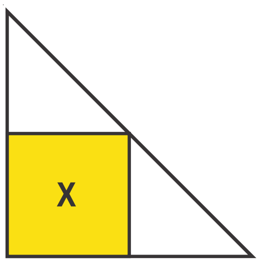


Figure (i)

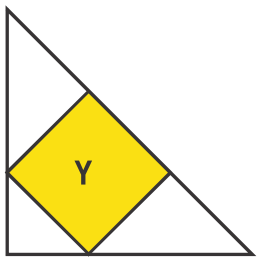


Figure (ii)

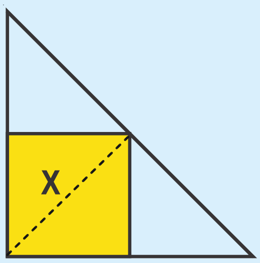


Figure (i)

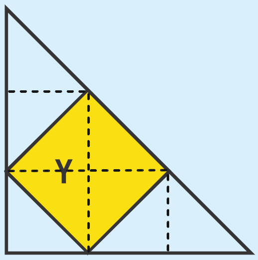


Figure (ii)

$X = \frac{1}{2}$ of big triangle

$Y = \frac{4}{9}$ of big Δ

$X : Y = \frac{1}{2} : \frac{4}{9} = 9 : 8$

05 **A rectangular strip of paper is divided into areas of 6 cm² and 16 cm² as shown in the given figure, and it is folded along the dotted line. If the shaded area A is three times that of B, find the unshaded area in the resulting figure.**

Unfolding the resulting figure, we have

$y + x = 6$ .... (1)

$3y + x = 16$ ....(2)

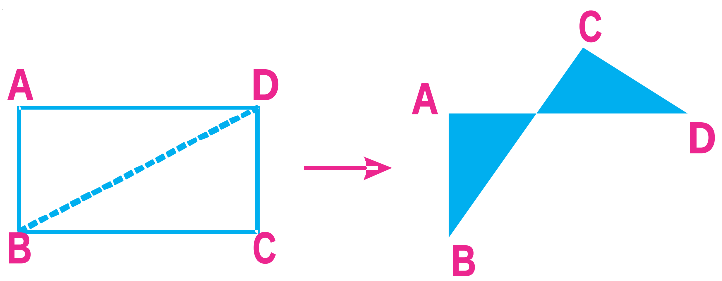
from eg. (1) and (2), we get

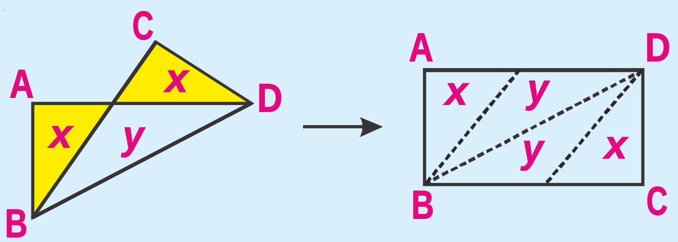
$(2) - (1) \Rightarrow 2y = 10 \Rightarrow y = 5 \text{ cm}^2$

$\therefore x = 1 \text{ cm}^2$

$\therefore$ Area of unshaded region $= 1 + 1 = 2 \text{ cm}^2$

06 **In the given figure, rectangle ABCD is folded along its diagonal BD. If the area of the newly formed figure is 40 cm² and the area of ABCD is 62 cm², find the area of the shaded region.**





$2x + y = 40$ .... (1)

$2x + 2y = 62$ .... (2)

(2) – (1): $y = 22$

From (1): $2x = 40 - 22 = 18$

$\therefore$ Shaded area $= 2x = 18\ \text{cm}^2$