

7.

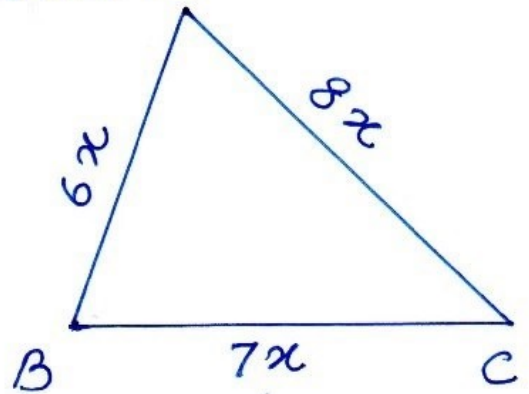
Perimeter of  $\triangle ABC = 420\text{ m}$ 

$$6x + 7x + 8x = 420$$

$$\Rightarrow 21x = 420$$

$$\Rightarrow x = \frac{420}{21} = 20$$

$$\Rightarrow x = 20$$



$\therefore$  Sides are  $6 \times 20 = 120\text{ m}$   
 $7 \times 20 = 140\text{ m}$   
 $8 \times 20 = 160\text{ m}$

$$s = \frac{120 + 140 + 160}{2}$$

$$= \frac{420}{2}$$

$$= 210\text{ m}$$

$$\text{area of } \triangle ABC = \sqrt{210(210-120)(210-140)(210-160)}$$

$$= \sqrt{210 \times 90 \times 70 \times 50}$$

$$= \sqrt{21 \times 10 \times 9 \times 10 \times 7 \times 10 \times 5 \times 10}$$

$$= 10 \times 10 \sqrt{3 \times 7 \times 3 \times 3 \times 7 \times 5}$$

$$= 100 \times 3 \times 7 \sqrt{15}$$

$$= 2100 \sqrt{15}\text{ m}^2$$