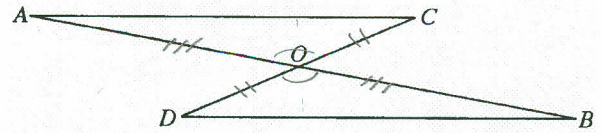


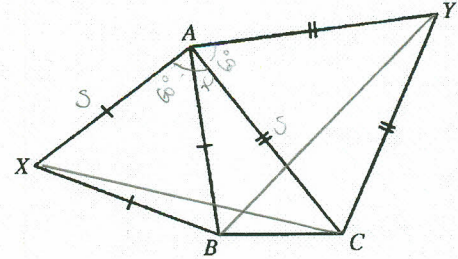
- 2 The diagram shows two straight lines, AB and CD , which are unequal in length and bisect each other at O . Explain why the triangles AOC and BOD are equal in area?



SAS $\Rightarrow \triangle AOC \cong \triangle BOD$

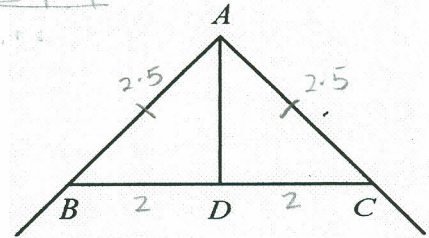
\therefore Since they are congruent \Rightarrow equal area

- 3 The triangle ABC has equilateral triangles XAB and YAC drawn on its sides AB and AC as shown in the figure. Name a triangle which is **congruent** to triangle AXC .



$\triangle AXY$

- 4 A man is building a shed. When he starts on the roof (see diagram), he finds that he has forgotten to bring his spirit level and is not sure whether the piece of timber AD is vertical or not. He knows that timber BC is horizontal and that $AB = AC = 2.5$ m and that $BC = 4$ m. His son who is learning geometry at school, tells him that if he makes $BD = 2$ m then AD will be vertical. Is his son correct? *Yes*
Justify your answer.



$AB = AC$ (given)

If $BD = 2$ m, then $BD = CD$

$\angle ABD = \angle ACD$ (base \angle s of $\triangle ABC$)

$\therefore \triangle ABD \cong \triangle ACD$ (SAS)

Hence if the \triangle s are congruent, then AD will be vertical $\#$

- 5 The rectangle $ABCD$ of perimeter 68 cm can be divided into 7 congruent rectangles as shown in the diagram. Find the area of the rectangle $ABCD$.

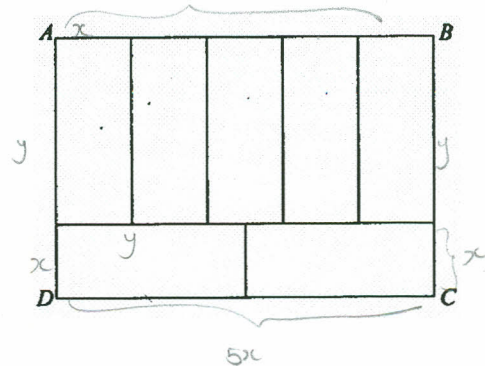
$$y = 2.5x$$

$$12x + 2y = 12x + 5x = 17x$$

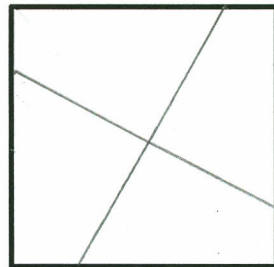
$$17x = 68$$

$$x = 4 \text{ cm} \quad \therefore \text{area}$$

$$\therefore y = 2.5 \times 4 = 20 \times 14 = 280 \text{ cm}^2$$



- 6 The diagram on the right shows a square. Add in two lines to divide the square into 4 congruent quadrilaterals that are not squares.



- 7 Shown below are 4 identical short sticks and 4 identical long sticks. Given also that the shorter ones are half the length of the longer ones. Using all of these sticks, try forming three congruent squares.

