

$$\begin{aligned} \text{Area}_{ABCD} &= \text{length} \times \text{width} \\ &= AB \times BC \\ &= 24 \text{ cm}^2. \end{aligned}$$

Δ's CBM & ADN are congruent.

So $\text{Area}_{CBM} = \text{Area}_{ADN}$

$$A_{AMCN} = \text{Area}_{ABCD} - 2 \text{Area}_{CBM}$$

$$= 24 - 2[2(6-x)]$$

$$A_2 = 24 - 24 + 4x$$

$$\boxed{A_2 = 4x} \text{ units square}$$

b) $A_1 = 12 - 2x$

$A_1 = -2x + 12$ is an affine function since it is of the form $y = ax + b$

where $a = -2$ & $b = 12$

$A_2 = 4x$ is a linear function since it's of the form $y = ax$ where $a = 4$

3) $A_2 = 2 \text{ Shaded area}$

$$= 2[2 \text{Area}_{CBM}]$$

$$A_2 = 4A_1$$

$$4x = 4(-2x + 12)$$

$$4x = -8x + 48$$

$$12x = 48$$

$$x = \frac{48}{12}$$

$$\boxed{x = 4 \text{ cm}}$$