

22. Let length = x c.m
breadth = y c.m

$$\text{Area of rectangle} = xy \text{ cm}^2$$

According to first condition,

$$(x-2)(y+3) = xy + 20$$

$$xy + 3x - 2y - 6 = xy + 20$$

$$\boxed{3x - 2y = 26} \quad \text{--- (I)}$$

According to 2nd condition,

$$(x+1)(y-2) = xy - 24$$

$$xy - 2x + y - 2 = xy - 24$$

$$\boxed{-2x + y = -22} \quad \text{--- (II)}$$

$$\boxed{-4x + 2y = -44} \quad \text{--- (III) Multiplying eqⁿ II by 2}$$

Adding I and III, we get

$$-x = -18$$

$$\boxed{x = 18}$$

Substituting $x=18$ in II,

$$-36 + y = -22, \therefore y = -22 + 36$$

$$\boxed{\therefore y = 14} \quad \therefore \text{length} = 18 \text{ c.m}$$

$$\text{breadth} = 14 \text{ c.m}$$