

■ LINEAR EQUATIONS IN ONE UNKNOWN ■

Form 1 Regular Course
Vol 2

Part 7 – Figure Problem

1. Let w be the width.

$$2(w + 6 + w) = 42$$

$$2w + 6 = 21$$

$$2w = 15$$

$$w = 7.5$$

Length = 13.5 km, width = 7.5 km

2. Let w be the width.

$$2(w + 3 + w) = 42$$

$$2w + 3 = 21$$

$$2w = 18$$

$$w = 9$$

Length = 12 cm, width = 9 cm

3. $10 + x = 2(10 - x)$

$$10 + x = 20 - 2x$$

$$3x = 10$$

$$x = \frac{10}{3}$$

Area of the rectangle = $\left(10 + \frac{10}{3}\right)\left(10 - \frac{10}{3}\right) = \frac{800}{9} \text{ cm}^2$ (or $88\frac{8}{9} \text{ cm}^2$)

4. (a) $\frac{160 - 6x}{5} \text{ cm}$

(b) $\frac{160 - 6x}{5} = 20$

$$160 - 6x = 100$$

$$6x = 60$$

$$x = 10$$

Part 8 – Speed Problem

1. Let x be the speed of B .

$$4(x+50)+4x=240$$

$$4x+200+4x=240$$

$$8x=40$$

$$x=5$$

A : 55 km/h, B : 5 km/h

2. Let t be the time required.

$$22t-20t=70$$

$$2t=70$$

$$t=35$$

35 minutes

3. Let d be the distance between A and B .

$$\frac{d}{4}-1.8=\frac{d}{5}+1.8$$

$$\frac{d}{4}-\frac{d}{5}=3.6$$

$$5d-4d=72$$

$$d=72$$

The distance = 72 km

4. Let t be the time he ride at 12 km/h.

$$12t+15(7-t)=96$$

$$12t+105-15t=96$$

$$3t=9$$

$$t=3$$

3 hours

5. Let d be the distance.

$$\frac{d}{60} + \frac{300-d}{80} = 4.5$$

$$4d + 3(300-d) = 1080$$

$$4d + 900 - 3d = 1080$$

$$d = 180$$

180 km

6. Let d be the distance.

$$\frac{d}{0.4} + \frac{d}{0.2} + 300 = 1200$$

$$\frac{d}{0.4} + \frac{d}{0.2} = 900$$

$$d + 2d = 360$$

$$3d = 360$$

$$d = 120$$

$$\text{The average speed} = \frac{240}{20 \times 60} = 0.2 \text{ m/s}$$