**Problem 3**

RF = 1/60000

Maximum length to be measured = 12 km

⸫ Length of scale = 

**3.2 km**

**10**

**11**

**10**

**9**

**8**

**6**

**7**

**5**

**4**

**3**

**2**

**1**

**0**

**HECTOMETERS**

**KILOMETERS**

**RF = 1/60000**PLANE SCALE SHOWING KILOMETERS AND HECTOMETERS

**Problem 4**

85

25

25

70

Φ40

Φ20

50

25

25

15

25

20

50

20

40

**Problem 5**

RF = 1/20  
Maximum length to be measured = 3 m => Length of scale =   
LC of main scale = 0.1 m

Forward Vernier: 9 MSD = 10 VSD => 1 VSD = 0.09 m = 9 cm

Mark on scale: 1.82 m = 2 m – 0.18 m (i.e. 20 MSD - 2 VSD)

**1.82 m**

**18**

**45**

**90**

**0**

**CENTIMETERS**

**METERS**

**DECIMETERS**

**5**

**10**

**2**

**0**

**3**

**RF = 1/20**VERNIER SCALE SHOWING METERS, DECIMETERS AND CENTIMETERS