Distance and Timing

Scale of maps:

For 1:50,000 OS maps:
- each 2cm grid square is 1km on the ground
- 100m on the ground is 2mm on the map
- 1mm on the map is 50m on the ground
- the contours are 10m elevation apart

For 1:25,000 OS maps:
- each 4cm grid square is 1km on the ground
- 100m on the ground is 4mm on the map
- 1mm on the map is 25m on the ground
- the contours are 10m elevation apart

To calculate the time a navigational leg will take:

1 Measure the horizontal distance on the map and work out how long this will take in minutes using the table below.
2 Count how many contour line you cross going **uphill.**
3 Add the number of uphill contour lines to the number of minutes for the horizontal distance. The result is the time for the leg.

Distance	Speed Km/Hr				
	2	**3**	**4**	**5**	**6**
100	3	2	1m 30s	1m 12s	1
200	6	4	3	2m 24s	2
300	9	6	4m 30s	3m 36s	3
400	12	8	6	4m 48s	4
500	15	10	7m 30s	6	5
600	18	12	9	7m 12s	6
700	21	14	10m 30s	8m 24s	7
800	24	16	12	9m 36s	8
900	27	18	13m 30s	10m 48s	9
1000	30	20	15	12	10

For example (using a 1:50,000 map), a leg that measures 16mm and crosses 11 contour lines uphill:

1 16mm is 800m on the ground. Walking at 4 Km/Hr this will take 12 minutes.
2 The route crosses 11 contour lines uphill (this is 110m of height gain).
3 11 + 12 = 23 minutes for the whole leg.