Map and Compassing Practice Question – Answers

1. Map Scale = 1:3450

Distance paced = 185pace * 1.4m/pace = 259m

Distance on map (measured) = 7.5cm

7.5cm on map = 259m on ground

$\frac{7.5cm}{7.5} = \frac{259m}{7.5}$

1cm = 34.5m *100cm = 1m
1cm = 34.5m *100cm/m
1cm (map) = 3450cm (ground)
Scale = 1:3450

- Because units are the same (both in cm) this can be converted into a ratio i.e. 1:3450. This means any measurement unit on the map multiplied by 3450 equals the distance on the ground.

2. North Arrow should be pointing to top of page.

Set Azimuth to 313 degrees and line up edge of compass along Road E. Note the direction the True North (N) symbol is pointing (top of the page).

To accurately draw: Subtract 313 degrees from 360 degrees (True North). This will give you the difference between Road E and True North.

360 degrees – 313 degrees = 47 degrees

Set you azimuth on your compass to 47 degrees. Place the compass on the map and turn the whole compass (not the dial) so that the perpendicular lines in the middle of the dial (the north lines) are lined up with Road E. The edge of your compass will be pointing True North, and you can draw your North Line with this edge.

3. Azimuth = 218 degrees; Distance = ~414 m

Azimuth:

Turn map and set compass up facing from Point C to Point D. Set North lines (perpendicular lines on dial) to face in direction of your previously drawn North Arrow). Note the number that is lined up with your tick mark. This is your azimuth.

Distance:

Measured distance on map = 12.0 cm

Map scale = 1:3450

12 cm (map) = 12 cm (map) * 3450

12 cm (map) = 41400 cm (ground)

$$12\text{ cm(map)} = \frac{41400\text{ cm}}{100\text{ cm/m}}$$

12 cm (map) = 414 m (ground)

3. Stand F Area = 1.6 Ha

Overlay dot grid on map and count dots that fall into Stand F = 46

1 dot = $0.25cm^2$

54 dots = 54 dots $*0.25cm^2/dot$

= $13.5cm^2$

1cm map = 34.5m ground

$(1cm)^2 = (34.5m)^2$

$1cm^2 = 1190.2m^2$

$1cm^2 * 13.5 = 1190.2m^2 * 13.5$

$$13.5cm^2 = \frac{16068.4m^2}{10000m^2/Ha} * 1\text{ Ha} = 10000m^2$$

$13.5cm^2$ (map) = 1.6 Ha (ground)