



# Headquarters Air Cadets Examination

Leading Cadet  
Basic Navigation  
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Serial: 192

1. Use black or dark blue pen, NOT pencil.
2. Write only on the answer sheet. Add your personal details.

1 What happens to the lines of longitude as they approach the north pole:

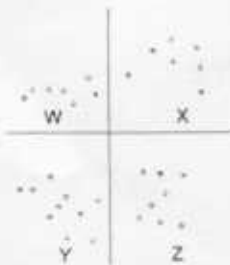
- a They get closer together
- b They follow the grid lines exactly
- c They stay parallel
- d They move apart

2 Positioning your map to relate to features on the ground is called:

- a Organising the map
- b Sighting the map
- c Ranging the map
- d Setting the map

3 Which of these star constellations is called the Plough/Great Bear:

- a W
- b Y
- c Z
- d X



4 A freely-suspended magnetic needle will point:

- a To grid north
- b To the magnetic north pole
- c Straight down to the ground
- d To the geographical north pole

5 Which of the following statements about the direction of magnetic north from locations in the UK, is true?

- a It is the same as both true and grid north
- b It is the same as true north
- c It differs from both true and grid north
- d It is the same as grid north

6 What does this symbol represent?

- a Polar north
- b True north
- c Grid north
- d Magnetic north



7 What is the angular difference between true north and magnetic north called?

- a Magnetic variation
- b Magnetic differential
- c Magnetic deviation
- d Compass error

8 The angular difference between grid north and magnetic north is:

- a Grid magnetic angle
- b Magnetic variation
- c Magnetic difference angle
- d Grid variation

9 Where on an M726 OS map is the information on magnetic variation located:

- a On the extreme left of the map
- b At the bottom of the map
- c On the back of the map
- d At the top of the map

10 What is the purpose of liquid in the capsule of a compass?

- a Prevents the needle from moving
- b Increases the needle's sensitivity
- c Allows the needle to settle down quickly
- d Allows the needle to be seen more clearly

11 A compass needle may be affected by iron objects placed close by. This is called:

- a Magnetic fluctuation
- b Magnetic deviation
- c Magnetic orientation
- d Magnetic variation

12 The final step in setting a map with a compass is to:

- a Turn the map only until it is pointing north
- b Turn the compass only until it is pointing at north
- c Turn the map and compass together until the needle is pointing south
- d Turn the map and compass together until the needle is inside the orientating arrow

13 The direction of a line drawn between two places on a map is measured against the grid lines and found to be 110degrees (Grid). If magnetic north is 6degrees west of grid north what is the magnetic bearing of the line?

- a 110degrees (M)
- b 116degrees (M)
- c 108degrees (M)
- d 104degrees (M)

14 When walking on a bearing in good visibility, the best technique is to:

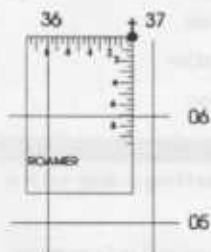
- a Send a team member out 50 metres and walk to there
- b Follow your compass and ignore the countryside
- c Select an object 5 metres in front and walk to it
- d Select a distant feature that is along your intended direction of travel

15 If you wanted to fix your position on a map by reference to prominent landmarks within your field of vision, what would give the best result?

- a Three bearings crossing to give a large position triangle
- b One bearing giving a position line
- c Three bearings crossing to give a small position triangle
- d Two bearings crossing

16 The 6 figure GR shown would be:

- a 073 372
- b 372 073
- c 368 067
- d 067 368



17 How much time should be added to a journey for every 200 metres of steep descent, using Naismith's rules?

- a 15 minutes
- b 10 minutes
- c 5 minutes
- d 20 minutes

18 Measuring distances accurately whilst out walking helps you particularly to:

- a Calculate the gradient
- b Choose the shortest route
- c Reduce the area of uncertainty in your position
- d Calculate magnetic variation

19 Following linear features to guide you close to your destination is known as:

- a Handrailing
- b Aiming off
- c Using attack points
- d Contouring

20 Which air mass originates around the equator and brings warm, cloudy weather to the UK in both summer and winter?

- a Polar maritime
- b Tropical maritime
- c Arctic maritime
- d Tropical continental

21 When a cold air mass catches up with another cold air mass, thereby undercutting a comparatively warm air mass and pushing it upwards off the Earth's surface, the weather system is called:

- a An occluded front
- b A ridge of high pressure
- c A cold stream
- d A non-frontal depression

22 An area of low pressure is also known as:

- a An anticyclone
- b A warm front
- c An occluded front
- d A depression

23 Lines on a weather chart joining points of equal pressure are called:

- a Isobars
- b Cold fronts
- c Occluded fronts
- d Warm fronts

24 Depressions move under the influence of:

- a Warm fronts
- b Cold fronts
- c Lower winds
- d Upper winds

25 When alto is used as a prefix in a name of a type of cloud, that cloud may be found at:

- a Low level
- b Any level
- c High level
- d Medium level