



Headquarters Air Cadets Examination

Leading Cadet
Basic Navigation
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Serial: 50

1. Use black or dark blue pen, NOT pencil.
2. Mark one answer per question with a cross.
3. If you wish to change an answer, cancel the original mark and mark another single answer.

A selected answer.

A cancelled answer.

Mark:

Name and Initials _____

Date of Exam _____

Date of Birth _____

Squadron/Unit _____

Wing _____

- 1 The difference between grid north and true north in the UK:
- Is not more than 2 degrees in most places
 - Is at least 2 degrees in most places
 - Changes a little each year
 - Always equals zero degrees

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

- Sighting the map
- Organising the map
- Ranging the map
- Setting the map

3 Correctly orientating your map will help you to:

- Determine your approximate location more easily
- Measure distances more accurately
- Read the numbers on contour lines more easily
- Read place names more easily

4 When using a watch to find north/south what should be pointed towards the sun:

- The 12 of the watch face
- The minute hand
- The hour hand
- The second hand

5 Which physical property of the Earth do we use, when navigating using a compass?

- It has a magnetic field
- It has a gravitational field
- It rotates clockwise
- The surface is covered with lines of latitude and longitude

6 What does this symbol represent?

- Magnetic north
- Grid north
- True north
- Polar north



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

- Magnetic deviation
- Magnetic differential
- Magnetic variation
- Compass error

8 The angular difference between magnetic north and grid north on a map is known as:

- Grid magnetic angle
- Grid deviation angle
- Magnetic deviation angle
- Compass deviation angle

9 When using a magnetic compass, why is it particularly important to hold it horizontal when taking a reading?

- To minimise the effect of local magnetic attraction (eg. from wire fences, electric cables, etc)
- To ensure that the needle floats freely
- To eliminate compass errors
- To improve damping

10 What is compass deviation?

- The difference between magnetic north and grid north
- The difference between magnetic north and true north
- The effects of non-magnetic and non-ferrous metals on a compass needle
- The effects of nearby ferrous metals or magnetic materials on a compass needle

11 When setting a map with a compass what is the first action:

- Set the map down on a firm non-magnetic surface
- Place the compass onto the map with the long edge on a north/south grid line
- Determine the grid magnetic angle and set this value against the direction arrow of the compass
- Turn the map and compass together until the compass needle falls inside the orienting arrow

12 When using a compass to take a bearing on a distant object you would first of all:

- Turn the capsule to subtract the grid magnetic angle
- Align the red compass needle to point at the object
- Point the direction of travel arrow at the object
- Turn the capsule so that the orientating arrow points at the object

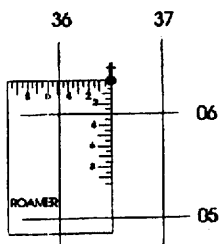
- 13 A grid bearing from a M726 series OS map on which the magnetic variation is westerly, can be converted to a magnetic bearing by:
- a Subtracting the angular difference between grid north and true north
 - b Subtracting the angular difference between magnetic north and grid north
 - c Adding the angular difference between magnetic north and grid north
 - d Adding the angular difference between grid north and true north

- 14 When walking on a bearing in good visibility, the best technique is to:
- a Follow your compass and ignore the countryside
 - b Send a team member out 50 metres and walk to there
 - 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 Two bearings crossing
 - b Three bearings crossing to give a small position triangle
 - c One bearing giving a position line
 - d Three bearings crossing to give a large position triangle

- 16 The 6 figure GR shown would be:

- a 365 063
- b 063 365
- c 375 077
- d 077 375



- 17 You are at a point where variation is 2° W, and Grid Magnetic Angle is 5° W. If the compass bearing of a church is 350° what is its Grid bearing?

- a 343°
- b 347°
- c 345°
- d 348°

- 18 How much time should be added to a journey on foot for every 200 metres climbed, using Naismith's rules?

- a 25 minutes
- b 30 minutes
- c 15 minutes
- d 20 minutes

- 19 When navigating, in order to reduce the area of uncertainty to a minimum, you should:

- a Measure distances and bearings as accurately as possible
- b Walk as quickly as possible to your destination
- c Never follow contours
- d Always follow paths

- 20 Handrailing is the term for:

- a Aiming for a prominent feature close to your destination
- b Following linear features to get to your destination
- c Walking with your map set
- d Walking on a compass bearing

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

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

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

- 23 An anticyclone is:

- a An area between two areas of high pressure
- b A depression
- c An area of low pressure
- d An area of high pressure

- 24 Depressions move under the influence of:

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

- 25 Stratus is what type of cloud:

- a Thread-like
- b Hair-like
- c Lumpy or heaped
- d Featureless layer