



Headquarters Air Cadets Examination

527

Leading Cadet

32/2 Basic Navigation

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Serial: 527

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 _____

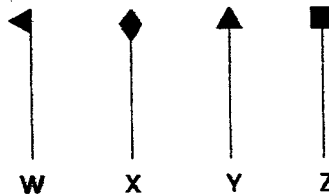
Wing _____

- 1 The difference between true north and grid north arises because:
- Lines of latitude and longitude do not match grid lines exactly
 - Grid lines get closer together near the poles of the Earth
 - Lines of latitude are not parallel
 - Lines of latitude and longitude match grid lines exactly
-
- 2 Turning a map so that identifiable features are in their relative position is called:
- Turning
 - Clocking
 - Mapping
 - Setting
-
- 3 Why is it important to set a map before using it in the field?
- So that distances can be measured more easily
 - So that names printed on the map may be read more easily
 - So that features on the ground seen by the observer can be easily related to features on the map
 - So that a compass can be used to follow the required direction over the ground
-
- 4 Which star group can be used to find the Pole Star:
- The Great Bear
 - The Crab Nebula
 - Orion's Belt
 - The Milky Way
-
- 5 A freely-suspended magnetic needle will point:
- To grid north
 - To the magnetic north pole
 - Straight down to the ground
 - To the geographical north pole

- 6 Which of the following statements about the direction of magnetic north from locations in the UK, is true?
- It is the same as true north
 - It differs from both true and grid north
 - It is the same as both true and grid north
 - It is the same as grid north

7 Which of these symbols represents true north?

- W
- Z
- Y
- X



8 Magnetic Variation is:

- The angular difference between grid north and magnetic north
- The angular difference between true north and magnetic north
- The angular difference between grid lines and lines of longitude
- The angular difference between true north and grid north

9 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

10 Where is information on the grid magnetic angle located on an M726 OS map:

- At the centre of the bottom margin
- In the extreme left hand side of the map
- At the centre of the top margin
- On the back of the map

11 On a Silva walking compass what colour is the magnetic needle:

- Blue and red
- Red and white
- Red and black
- White and blue

12 Which of the following would be most likely to cause magnetic deviation if close to a compass:

- A plastic water bottle
- A cattle grid
- Aluminium tent pole
- A tree

13 To take a bearing between 2 features on a map you would first place the compass on the map so that its longest edge runs through both features and its direction of travel arrow points in your intended direction of travel. You would then:

- Turn the capsule on the compass to deduct the grid magnetic angle
- Turn the map and compass together until the needle falls into the orienting arrow
- Turn the capsule on the compass so that its orienting lines are parallel to the north-south grid line
- Turn the capsule on the compass until the needle falls into the orienting arrow

14 The direction of a track drawn between two places on a map is measured against the grid-lines and found to be 102degrees (Grid). If magnetic north is 5degrees west of grid north, what is the magnetic bearing of the track?

- a 097degrees (M)
- b 102degrees (M)
- c 107degrees (M)
- d 095degrees (M)

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

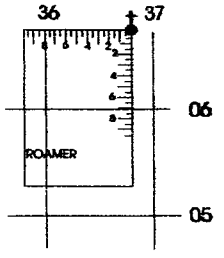
- a Select an object 5 metres in front and walk to it
- b Follow your compass and ignore the countryside
- c Send a team member out 50 metres and walk to there
- d Select a distant feature that is along your intended direction of travel

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

17 The 6 figure GR shown would be:

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



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

- a 345 degrees
- b 348 degrees
- c 347 degrees
- d 343 degrees

19 Naismith's Rule applies to the calculation of:

- a Gradients
- b The shapes depicted by contour lines
- c The speed of advance on foot in mountainous country
- d True headings from magnetic headings

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

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

21 A cadet decides to follow a stream down from the hill-side because she knows that the stream runs close to her campsite. The cadet is using a navigational technique known as:

- a Handrailing
- b Aiming off
- c Resection
- d Contouring

22 Which of these types of air mass brings cold dry weather with little or no cloud to the British Isles in winter?

- a Polar continental via the long sea route
- b Polar maritime
- c Returning polar maritime
- d Polar continental via the short sea-track

23 An occluded front is represented by:

- a A line carrying alternate semicircles and triangles
- b A line carrying semicircles
- c A line carrying alternate semicircles and squares
- d A line carrying squares

24 Generally, an area of high pressure will tend to bring:

- a Long periods of poor weather
- b Fast moving wet weather systems
- c Long periods of fine weather
- d Fast moving fine weather systems

25 In the diagram the dotted lines represent the upper wind and the solid lines the lower wind. if you stood at Y with your back to the lower wind and the upper wind is moving from left to right:

- a The weather is likely to improve
- b The weather is likely to deteriorate
- c You'll feel a warm wind in your face
- d There will be no change in the weather for a while

