



Headquarters Air Cadets Examination

Leading Cadet
32/2 Basic Navigation
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Serial: 563

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 _____

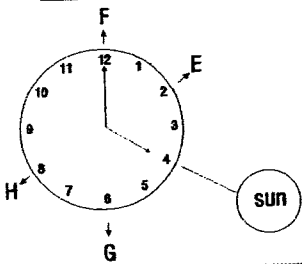
Squadron/Unit _____

Wing _____

- 1 The difference between true north and grid north arises because:
- Lines of latitude and longitude do not match grid lines exactly
 - Lines of latitude are not parallel
 - Lines of latitude and longitude match grid lines exactly
 - Grid lines get closer together near the poles of the Earth

- 2 Orientating a map can also be called:
- Setting a map
 - Ranging a map
 - Organising a map
 - Sighting a map

- 3 If you are on the Isle of Wight on 21 November at 4 pm (GMT), and you hold your watch flat with its hour hand pointing to the Sun - as in the diagram - which arrow (E, F, G, or H) points to the north?
- G
 - E
 - H
 - F



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

- 6 What does this symbol represent?
- Polar north
 - True north
 - Magnetic north
 - Grid north



- 7 What is the angular difference between true north and magnetic north called?
- Compass error
 - Magnetic variation
 - Magnetic differential
 - Magnetic deviation

- 8 The angular difference between magnetic north and grid north on a map is known as:
- Grid deviation angle
 - Compass deviation angle
 - Grid magnetic angle
 - Magnetic deviation angle

- 9 What information is provided at the bottom of an M726 OS map?
- Abbreviations
 - Grid magnetic angle
 - Magnetic variation
 - Sheet number

- 10 On a Silva walking compass what colour is the magnetic needle:
- Red and white
 - Red and black
 - White and blue
 - Blue and red

- 11 Which of the following would be most likely to cause magnetic deviation if close to a compass:
- Aluminium tent pole
 - A plastic water bottle
 - A cattle grid
 - A tree

- 12 The final step in setting a map with a compass is to:
- Turn the map and compass together until the needle is pointing south
 - Turn the map and compass together until the needle is inside the orientating arrow
 - Turn the map only until it is pointing north
 - Turn the compass only until it is pointing at north

- 4 Which physical property of the Earth do we use, when navigating using a compass?
- It rotates clockwise
 - The surface is covered with lines of latitude and longitude
 - It has a magnetic field
 - It has a gravitational field

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

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

14 The grid bearing between 2 features on a map was measured to be 040 degrees (Grid). If the grid magnetic angle is 6 degrees west of grid north, what is the magnetic bearing?

- a 040 degrees
- b 046 degrees
- c 034 degrees
- d 043 degrees

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

16 A Roamer would be used in finding:

- a The average gradient
- b The grid reference point
- c A relative bearing
- d The direction of a track

17 You are at a point where variation is 1 degree W, and Grid Magnetic Angle is 6 degrees W. If the compass bearing of a trig point is 150 degrees what is its Grid bearing?

- a 143 degrees
- b 156 degrees
- c 157 degrees
- d 144 degrees

18 Pacing can be an accurate method of measuring distance if carried out over:

- a Long distances
- b To a count of 5,000
- c Medium distances
- d Short distances

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

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

20 Handrailing is the term for:

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

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

22 Fronts occur where:

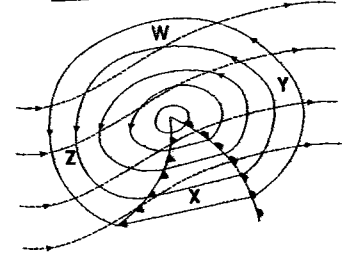
- a Two cold air masses meet
- b A cold air mass meets a warm air mass
- c The atmospheric pressure is very high
- d Two warm air masses meet

23 An anticyclone is:

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

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



25 Cloud names may have a prefix which indicates the height of the cloud base. Which of these indicates a cloud with a base at medium level?

- a Nimbo
- b Alto
- c Strato
- d Cirro