



Headquarters Air Cadets Examination

Leading Cadet
32/2 Basic Navigation
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Serial: 236

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 What happens to the lines of longitude as they approach the north pole:
- They get closer together
 - They stay parallel
 - They follow the grid lines exactly
 - They move apart

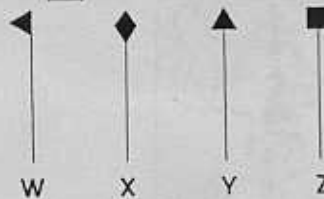
- 2 Setting a map is also known as:
- Turning
 - Mapping
 - Orientating
 - Clocking

- 3 Which star group can be used to find the Pole Star:
- Orion's Belt
 - The Milky Way
 - The Great Bear
 - The Crab Nebula

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

- 5 The Earth's magnetic pole is located:
- In the same place as the true north pole
 - Slightly north of Hudson Bay in Canada
 - In northern Siberia
 - In the same place as the grid north pole

- 6 Which of these symbols represents grid north?
- Y
 - Z
 - W
 - X



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

- 8 Where on an M726 OS map is the information on magnetic variation located:
- At the top of the map
 - At the bottom of the map
 - On the back of the map
 - On the extreme left of the map

- 9 When using a magnetic compass, why is it particularly important to hold it horizontal when taking a reading?
- To improve damping
 - To minimise the effect of local magnetic attraction (eg. from wire fences, electric cables, etc)
 - To eliminate compass errors
 - To ensure that the needle floats freely

- 10 A compass needle may be affected by iron objects placed close by. This is called:
- Magnetic deviation
 - Magnetic orientation
 - Magnetic fluctuation
 - Magnetic variation

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

- 12 When using a compass to take a bearing on a distant object you would first of all:
- Turn the capsule so that the orientating arrow points at the object
 - Point the direction of travel arrow at the object
 - Turn the capsule to subtract the grid magnetic angle
 - Align the red compass needle to point at the object

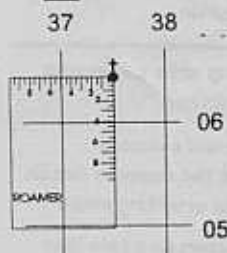
- 13 The bearing of an object taken with a compass is found to be 280degrees(M) and the map shows that Magnetic north is 10degrees west of Grid north. What is the grid bearing?
- 270 degrees (Grid)
 - 280 degrees (Grid)
 - 290 degrees (Grid)
 - 260 degrees (Grid)

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

15 The 6 figure GR shown would be:

- a 056 385
- b 375 064
- c 064 375
- d 385 056



16 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

17 Whilst walking over reasonably flat ground a cadet takes 1hr to cover 3km. How long will it take him to walk 500m at the same speed?

- a 30 mins
- b 40 mins
- c 60 mins
- d 10 mins

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

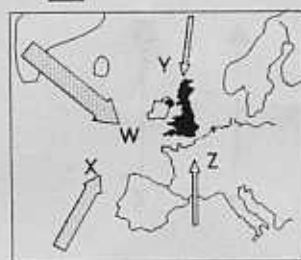
- a Choose the shortest route
- b Reduce the area of uncertainty in your position
- c Calculate magnetic variation
- d Calculate the gradient

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

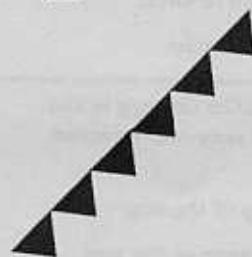
20 Which air mass is called Arctic Maritime?

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



21 The diagram shows:

- a Warm front
- b Occluded front
- c Anti-cyclone
- d Cold front



22 An anticyclone is:

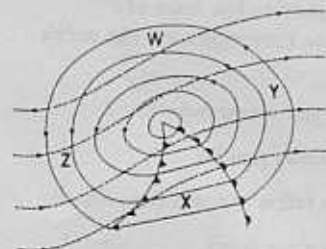
- a An area of low pressure
- b An area of high pressure
- c A depression
- d An area between two areas of high pressure

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

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

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 The weather is likely to improve
- c The weather is likely to deteriorate
- d There will be no change in the weather for a while



25 Stratus is what type of cloud:

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