



Headquarters Air Cadets Examination

Leading Cadet
32/2 Basic Navigation
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Serial: 260

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. When navigating with a map, which north must you always use for reference?

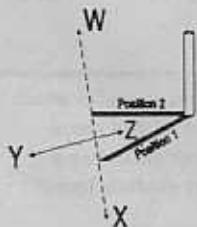
- a True north
- b Grid north
- c Actual north
- d Magnetic north

2. Setting or orientating a map is:

- a Positioning your map relative to the features on the ground
- b Holding it flat and horizontal
- c Holding it so that the contour numbers are the right way for reading
- d Folding it correctly for use outdoors

3. While on an expedition in South Wales a cadet places a stick in the ground and watches the shadow move from position 1 to position 2. Which arrow points north:

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



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

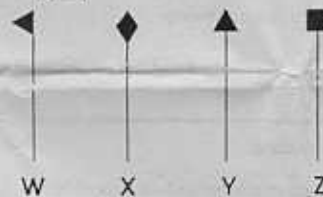
- a The surface is covered with lines of latitude and longitude
- b It has a magnetic field
- c It rotates clockwise
- d It has a gravitational field

5. The Earth's magnetic pole is located:

- a In the same place as the true north pole
- b In the same place as the grid north pole
- c In northern Siberia
- d Slightly north of Hudson Bay in Canada

6. Which of these symbols represents true north?

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



7. Magnetic Variation is:

- a The angular difference between true north and grid north
- b The angular difference between grid lines and lines of longitude
- c The angular difference between grid north and magnetic north
- d The angular difference between true north and magnetic north

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

- a Grid deviation angle
- b Compass deviation angle
- c Magnetic deviation angle
- d Grid magnetic angle

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

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

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

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

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

- a A cattle grid
- b A plastic water bottle
- c Aluminium tent pole
- d A tree

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

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

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:

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

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 107degrees (M)
- c 095degrees (M)
- d 107degrees (M)

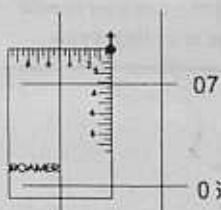
15 If you wanted to fix your position on a map by reference to prominent landmarks within your field of vision, what would give the best result?

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

16 The 6 figure GR shown would be:

- a 074 385
- b 072 375
- c 375 073
- d 385 074

37 38



17 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 343 degrees
- c 348 degrees
- d 347 degrees

18 Naismith's Rule applies to the calculation of:

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

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

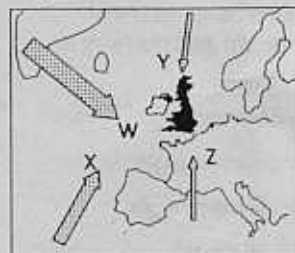
- a Always follow paths
- b Measure distances and bearings as accurately as possible
- c Never follow contours
- d Walk as quickly as possible to your destination

20 Contouring means:

- a Losing as much height as possible
- b Gaining as much height as possible
- c Walking around a hill
- d Walking over a hill

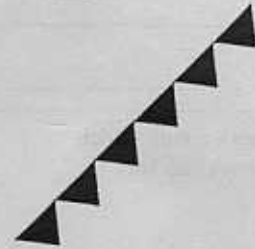
21 Which air mass is called Arctic Maritime?

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



22 The diagram shows:

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

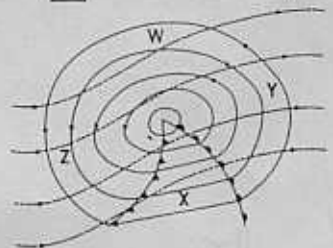


23 An area of low pressure is also known as:

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

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