

NAVIGATION (1)
GENERAL NAVIGATION



- 1 Which is the highest latitude listed below at which the sun will rise above the horizon and set every day?
- A 68°
 - B 66°
 - C 62°
 - D 72°
- 2 An aircraft flies a great circle track from 56° N 070° W to 62° N 110° E. The total distance travelled is?
- A 3720 NM
 - B 5420 NM
 - C 1788 NM
 - D 2040 NM
- 3 On the 27th of February, at 52°S and 040°E, the sunrise is at 0243 UTC. On the same day, at 52°S and 035°W, the sunrise is at:
- A 0743 UTC
 - B 0243 UTC
 - C 2143 UTC
 - D 0523 UTC
- 4 An aircraft at position 60°N 005°W tracks 090°(T) for 315 km. On completion of the flight the longitude will be:
- A 002°10'W
 - B 000°15'E
 - C 000°40'E
 - D 005°15'E
- 5 Isogonals are lines of equal:
- A compass deviation.
 - B magnetic variation.
 - C wind velocity.
 - D pressure.
- 6 The scale on a Lambert conformal conic chart:
- A is constant along a meridian of longitude
 - B is constant along a parallel of latitude
 - C varies slightly as a function of latitude and longitude
 - D is constant across the whole map
- 7 On a Direct Mercator chart, a rhumb line appears as a:
- A small circle concave to the nearer pole
 - B straight line
 - C curve convex to the nearer pole
 - D spiral curve

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- 8** Given:
Magnetic heading 311°
Drift angle 10° left
Relative bearing of NDB 270°
What is the magnetic bearing of the NDB measured from the aircraft?
- A** 221°
B 208°
C 211°
D 180°
- 9** A Lambert conformal conic chart has a constant of the cone of 0.80.
A straight line course drawn on this chart from A ($53^\circ\text{N } 004^\circ\text{W}$) to B is 080° at A; course at B is $092^\circ(\text{T})$.
What is the longitude of B?
- A** 019°E
B 008°E
C $009^\circ36'\text{E}$
D 011°E
- 10** Given:
True course 300°
drift 8°R
variation 10°W
deviation -4°
Calculate the compass heading.
- A** 322°
B 306°
C 278°
D 294°
- 11** Given:
True track 180°
Drift 8°R
Compass heading 195°
Deviation -2°
Calculate the variation.
- A** 21°W
B 25°W
C 5°W
D 9°W

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12 Given the following:
Magnetic heading: 060°
Magnetic variation: 8°W
Drift angle: 4° right
What is the true track?

- A** 064°
- B** 056°
- C** 072°
- D** 048°

13 Given:
Course 040°(T),
TAS is 120 kt,
Wind speed 30 kt.
Maximum drift angle will be obtained for a wind direction of:

- A** 130°
- B** 145°
- C** 115°
- D** 120°

14 Given:
IAS 120 kt,
FL 80,
OAT +20°C.
What is the TAS?

- A** 141 kt
- B** 102 kt
- C** 120 kt
- D** 132 kt

15 Given:
Airport elevation is 1000 ft.
QNH is 988 hPa.
What is the approximate airport pressure altitude?
(Assume 1 hPa = 27 FT)

- A** 320 FT
- B** 1680 FT
- C** - 320 FT
- D** 680 FT

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- 16** An aircraft was over 'Q' at 1320 hours flying direct to 'R'.
Given:
- | | |
|----------------------------|----------|
| Distance 'Q' to 'R' | 3016 NM |
| True airspeed | 480 kt |
| Mean wind component 'out' | -90 kt |
| Mean wind component 'back' | +75 kt |
| Safe endurance | 10:00 HR |
- The distance from 'Q' to the Point of Safe Return (PSR) 'Q' is:
- A 2370 NM
 - B 2290 NM
 - C 1510 NM
 - D 1310 NM
- 17** An island is observed to be 15° to the left.
The aircraft heading is $120^\circ(\text{M})$, variation $17^\circ(\text{W})$.
The bearing $^\circ(\text{T})$ from the aircraft to the island is:
- A 268
 - B 302
 - C 088
 - D 122
- 18** What is the effect on the Mach number and TAS in an aircraft that is climbing with constant CAS?
- A Mach number decreases; TAS decreases
 - B Mach number increases; TAS remains constant
 - C Mach number increases; TAS increases
 - D Mach number remains constant; TAS increases
- 19** An aircraft at FL370 is required to commence descent at 120 NM from a VOR and to cross the facility at FL130. If the mean GS for the descent is 288 kt, the minimum rate of descent required is:
- A 920 FT/MIN
 - B 890 FT/MIN
 - C 860 FT/MIN
 - D 960 FT/MIN
- 20** The distance between two waypoints is 200 NM,
To calculate compass heading, the pilot used 2°E magnetic variation instead of 2°W .
Assuming that the forecast W/V applied, what will the off track distance be at the second waypoint?
- A 14 NM
 - B 7 NM
 - C 0 NM
 - D 21 NM

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- 21** Given:
Half way between two reporting points the navigation log gives the following information:
TAS 360 kt,
W/V 330°/80kt,
Compass heading 237°,
Deviation on this heading -5°,
Variation 19°W.
What is the average ground speed for this leg?
- A** 403 kt
 - B** 354 kt
 - C** 373 kt
 - D** 360 kt
- 22** (For this question use annex A)
Complete line 5 of the 'FLIGHT NAVIGATION LOG', positions 'J' to 'K'.
What is the HDG°(M) and ETA?
- A** HDG 337° - ETA 1422 UTC
 - B** HDG 320° - ETA 1412 UTC
 - C** HDG 337° - ETA 1322 UTC
 - D** HDG 320° - ETA 1432 UTC
- 23** Which of the following lists the first three pages of the FMC/CDU normally used to enter data on initial start-up of the B737-400 Electronic Flight Instrument System?
- A** POS INIT - RTE - IDENT
 - B** IDENT - POS INIT - RTE
 - C** POS INIT - RTE - DEPARTURE
 - D** IDENT - RTE - DEPARTURE
- 24** The data that needs to be inserted into an Inertial Reference System in order to enable the system to make a successful alignment for navigation is:
- A** airport ICAO identifier
 - B** the position of an in-range DME
 - C** aircraft heading
 - D** aircraft position in latitude and longitude
- 25** The purpose of the TAS input, from the air data computer, to the Inertial Navigation System is for:
- A** position update in Attitude mode
 - B** the calculation of wind velocity
 - C** the calculation of drift
 - D** position update in Navigation mode
- 26** A pilot accidentally turning OFF the INS in flight, and then turns it back ON a few moments later. Following this incident:
- A** everything returns to normal and is usable
 - B** the INS is usable in NAV MODE after a position update
 - C** it can only be used for attitude reference
 - D** no useful information can be obtained from the INS

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- 27** ATT Mode of the Inertial Reference System (IRS) is a back-up mode providing:
- A** altitude, heading and position information
 - B** navigation information
 - C** only attitude information
 - D** only attitude and heading information
- 28** Which of the following statements concerning the position indicated on the Inertial Reference System (IRS) display is correct?
- A** The positions from the two IRSs are compared to obtain a 'best position' which is displayed on the IRS
 - B** It is updated when 'go-around' is selected on take-off
 - C** It is constantly updated from information obtained by the FMC
 - D** It is not updated once the IRS mode is set to NAV
- 29** What is the source of magnetic variation information in a Flight Management System (FMS)?
- A** The main directional gyro which is coupled to the magnetic sensor (flux valve) positioned in the wingtip
 - B** Magnetic variation information is stored in each IRS memory; it is applied to the true heading calculated by the respective IRS
 - C** Magnetic variation is calculated by each IRS based on the respective IRS position and the aircraft magnetic heading
 - D** The FMS calculates MH and MT from the FMC position

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FLIGHT NAVIGATION LOG

Line No.	Time	Course/Track (T)	W/V	HDG (T)	VAR	HDG (M)	POSITION FROM TO	CAS/MACH	FL OAT	TAS	GS	DIST	TIME	ETA
1	1015	270	050/40		7E		A B	210	180 -20			300		
2	1050	180	320/50		5W		C D	175	160 -10			480		
3	1125	090	140/60		10W		E F	M 0.82	350 -40			300		
4	1210	360	315/70		10E		G H	M 0.78	310 -35			600		
5	1245	330	240/30		17W		J K	150	100 -10			275		
6	1355	070	020/60		11W		L M	M 0.84	390 -55			495		

Sample
Questions