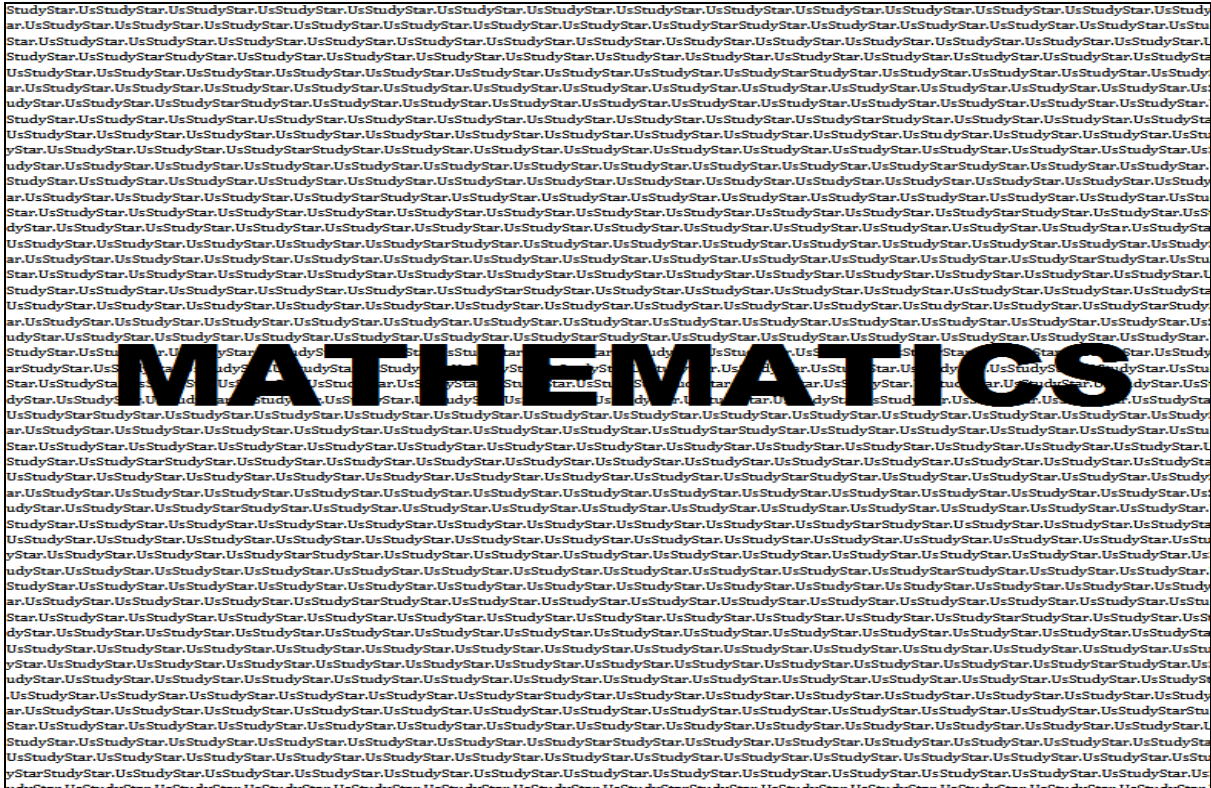




EARTH GEOMETRY

Total Marks: 20

Duration: 0 hours, 30 minutes

Instructions to test takers

1. Answer all the questions in this paper
2. All the answers for the questions in this paper will be found on **Study Star** (www.studystar.me)
3. Using the answers on the website, mark yourself truthfully and carefully.

Turn this page, time yourself and begin the test

Section A [10 marks]

1. Two points A and B lie on the same longitude with coordinates $(60^{\circ}\text{N}, 30^{\circ}\text{E})$ and $(30^{\circ}\text{S}, 30^{\circ}\text{E})$ respectively. Find the difference in latitude between A and B.

2. Find the distance between A and B in question 1 above.

3. If it takes 3 hours for a plane to move from A to B. Find the speed of the plane in notes using information from question (1).

4. Two points C and D lie on the same latitude with coordinates $(30^{\circ}\text{N}, 60^{\circ}\text{W})$ and $(30^{\circ}\text{N}, 60^{\circ}\text{E})$. Find the difference between C and D.

5. Find the time difference between C and D in question (4) above.

6. Find the distance between C and D in question (4) above.

7. It took a plane 5 hours to move from C to D. Calculate the speed of the plane in notes.

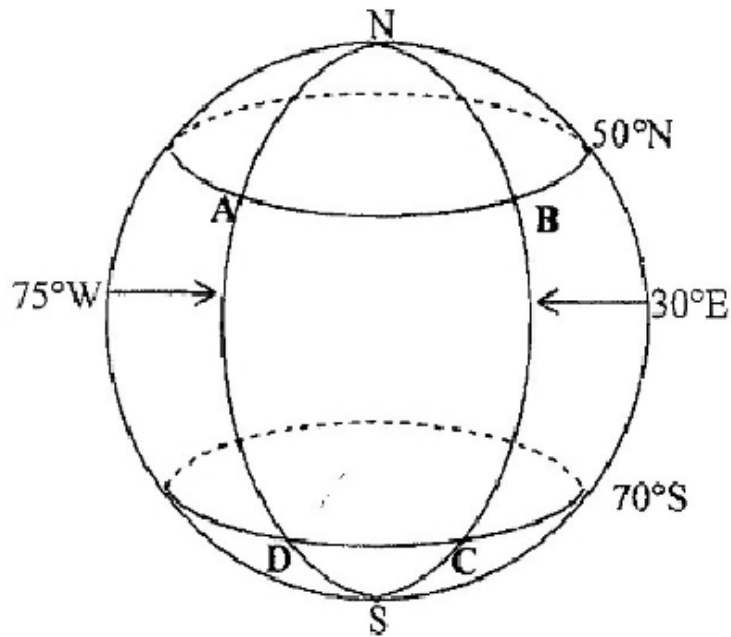
8. The distance between P and Q is 3 600nm. If an aero plane flies from P to Q at 600 knots, how long will it take?

9. A plane flew from town A(67°S , 40°E) to town B(23°N , 40°E). Calculate the distance AB in kilometers. ($R=6370\text{km}$, $\pi=\frac{22}{7}$)

10. Madana and Kalumbo are on longitude 45°E and 15°E respectively. If it is 15 30 hours in Madana, what is the time in Kalumbo?

Section B [10 marks]

11. The points A, B, C and D are on the surface of the earth.
(Take $\pi = 3.142$ and $R = 3437\text{nm}$)

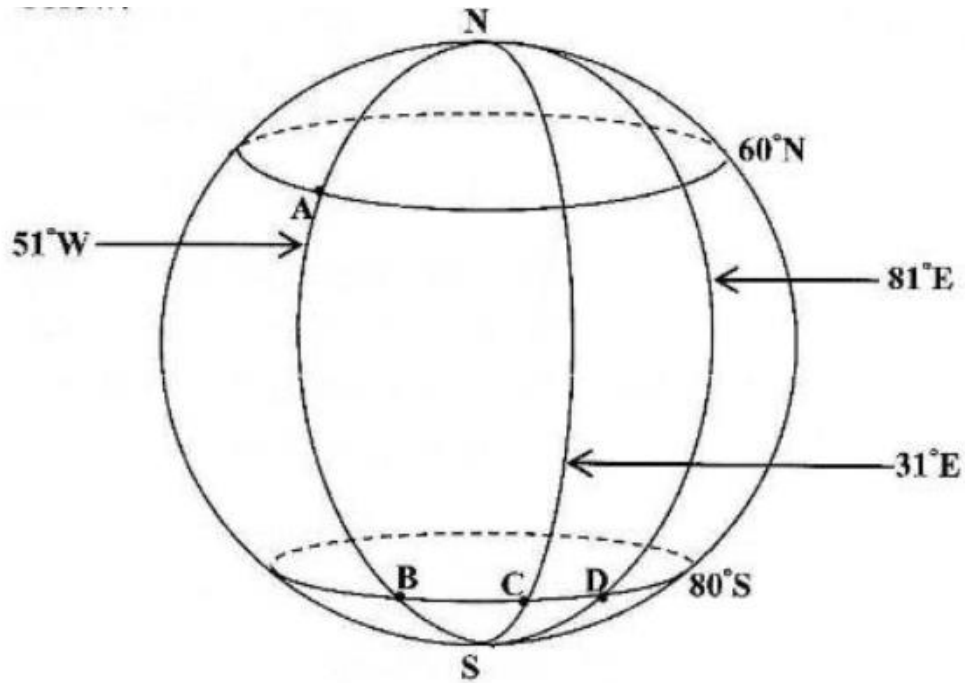


Find the difference in latitude between C and B. [1]

12. From question 11 above, calculate the length of the circle of latitude 50°N in nm [2]
-

13. Using question 11 above, find the distance AD in nm. [3]
-

14. A, B, C and D are points on the surface of the earth as shown below.



Using latitudes and longitudes, write the positions of points A and B [2]

15. Calculate the distance CD in nautical miles from question 14 above. [$\pi = 3.142$ and $R = 3437\text{nm}$] [2]
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