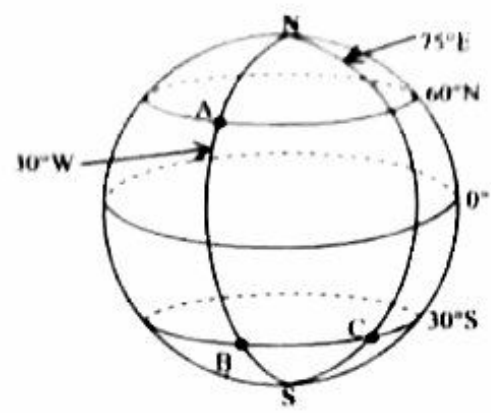


11 The diagram below shows point A(60°N, 30°W), B(30°S, 30°W) and C(30°S, 75°E).



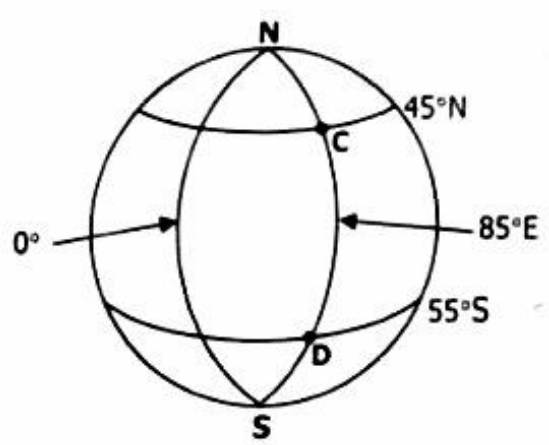
- (a) If the local time at B is 15 00, what is the local time at C?
- (b) It takes a plane 6 hours to fly from A to B. What is its speed in knots?

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For  
Examiner's  
Use

- 10 A is a point on (70°N, 15°E) and B is a point on (70°N, 45°W). Using the appropriate trigonometric ratio given below, calculate the distance between A and B along the circle of latitude 70°N, giving your answer in nautical miles.  
( $\cos 15^\circ = 0.97$ ,  $\cos 45^\circ = 0.71$ ,  $\cos 60^\circ = 0.5$ ,  $\cos 70^\circ = 0.34$ ).

- (b) The diagram below shows a model of the earth. The points C and D are on the same longitude. The latitudes of C and D are 45°N and 55°S respectively.  
(Take  $\pi = 3.142$  and  $R = 3\,437\text{nm}$ )



- (i) Write the position of the point C. [1]
- (ii) Calculate the difference in latitude between C and D. [1]
- (iii) Find the distance CD in nautical miles. [2]
- (iv) Calculate the circumference of the latitude 45°N in nautical miles. [2]