6. A ship sails from a port A on a bearing of 030° for 22 miles to a marker B at which it alters course and sails on a bearing of 075° for 27 miles to its destination C. AN and BM represent north lines.

a) On the diagram mark the sizes of \( \angle BAN \) and \( \angle CBM \).

b) Determine, to the nearest 0.1 mile, how far C is east of A.

c) Determine, to the nearest 0.1 mile, how far C is north of A.

d) Determine, to the nearest 0.1 mile, the direct distance from A to C.

e) Determine the three figure bearing of C from A.
Use the following information to answer questions #7 and #8.

A plane starts from a point $P$ and flies 240 km on a bearing of $120^\circ$ to $Q$. At $Q$ the plane makes a $90^\circ$ turn and flies 100 km on a bearing of $210^\circ$ to $R$. At $R$ the plane again changes direction and flies back to $P$.

**Multiple Choice**

7. The direct distance, in km, from $R$ to $P$ is

A. 140  
B. 218  
C. 260  
D. 340

8. The three figure bearing the pilot uses to fly from $R$ to $P$ is

A. 023°  
B. 037°  
C. 323°  
D. 337°

**Numerical Response**

9. A set of stairs has a vertical rise of 16 cm for every 27 cm horizontal run. The angle, to the nearest tenth of a degree, between the stairs and the floor is ________.

(Record your answer in the numerical response box from left to right)

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**Answer Key**

1. 1570 ft  
2. a) The angle in a semicircle is a right angle. b) 5.8 cm

3. a) 86 m  
b) 21°

4. a) see diagram below  
b) 50.8°  
c) 16.7 m

5. 77 km/h

6. a) Angle $BAN = 30^\circ$, angle $CBM = 75^\circ$. b) 37.1 miles  
c) 26.0 miles  
d) 45.3 miles  
e) 055°

7. C  
8. C  
9. 307

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