GCSE Maths: Angles of elevation and depression, and bearings (Foundation): worksheet

GCSE Maths - Pythagoras and Trigonometry - Foundation - Lesson 20.6

Name: _____ Date: _____ Score: _____

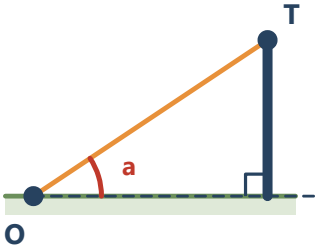
12 questions. Write your answers in the spaces. Answers and step-by-step help are free at **websink.site/gcse/maths/ch20-pythagoras-trigonometry/foundation/angles-of-elevation-and-depression-and-bearings/**

Exercise 20H Elevation, depression and bearings

Calculator allowed

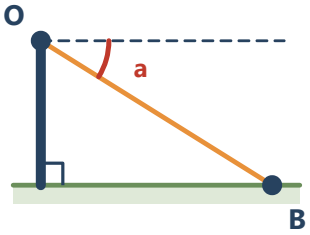
1 Look at each diagram. Is the angle marked *a* an angle of elevation or an angle of depression? Give a reason.

(a)



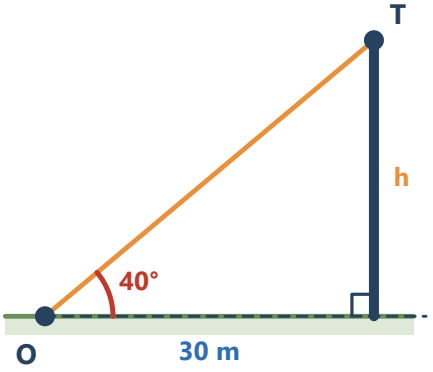
Answer:

(b)



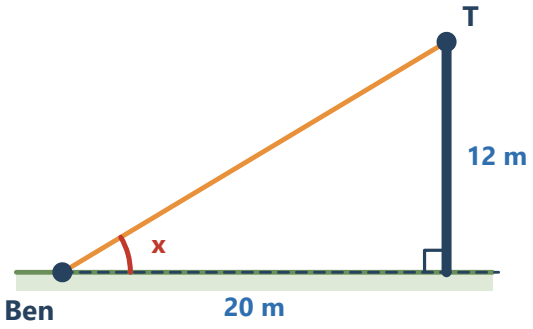
Answer:

2 The angle of elevation of the top of a flagpole from a point on level ground 30 m from its foot is 40°. Work out the height of the flagpole, correct to 1 decimal place.



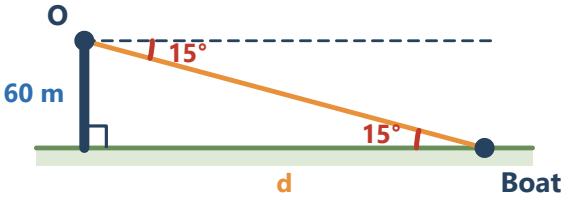
Answer:

3 A tree is 12 m tall. Ben stands 20 m from the base of the tree on level ground. Work out the angle of elevation of the top of the tree from Ben, correct to 1 decimal place.



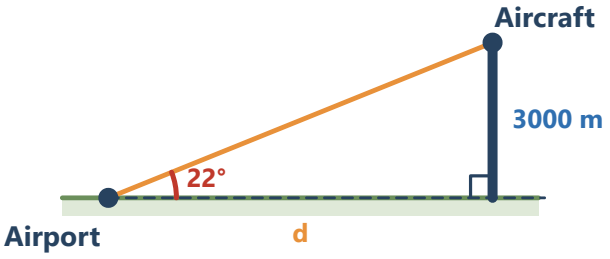
Answer:

4 From the top of a vertical lighthouse 60 m tall, the angle of depression of a boat is 15°. How far is the boat from the foot of the lighthouse? Give your answer correct to 1 decimal place.



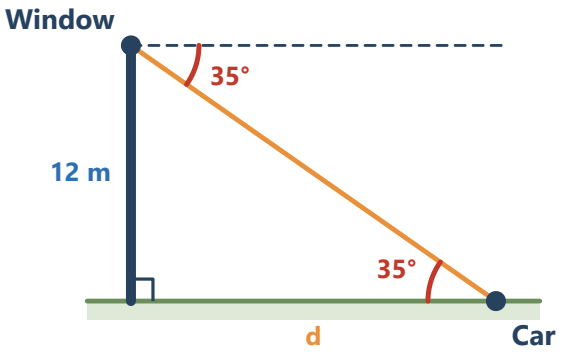
Answer:

5 An aircraft is flying at a height of 3000 m. From the airport the angle of elevation of the aircraft is 22°. Work out the horizontal distance of the aircraft from the airport, to the nearest metre.



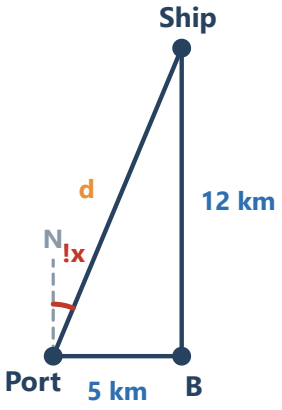
Answer:

6 From a window 12 m above level ground, the angle of depression of a car is 35°. How far is the car from the wall of the building? Give your answer correct to 1 decimal place.



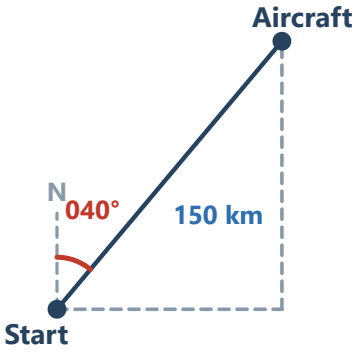
Answer:

7 A ship leaves a port and sails 5 km east and then 12 km north. Work out the distance of the ship from the port, and the bearing of the ship from the port to the nearest degree.



Answer:

8 An aircraft flies 150 km on a bearing of 040°. Work out how far (a) east and (b) north of its starting point the aircraft is. Give your answers correct to 1 decimal place.



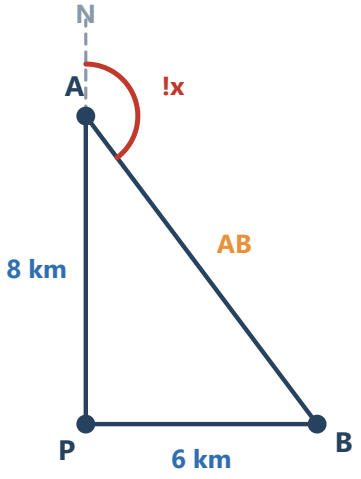
(a) east

Answer:

(b) north

Answer:

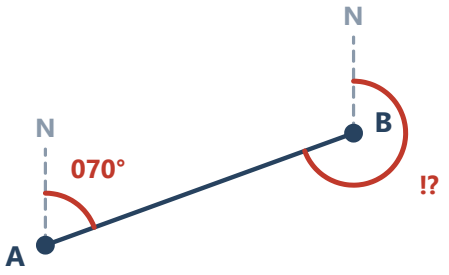
9 A port P has a lighthouse A 8 km due north of it. A buoy B is 6 km due east of P. Work out (a) the distance AB, (b) the bearing of B from A, to the nearest degree.



Answer:

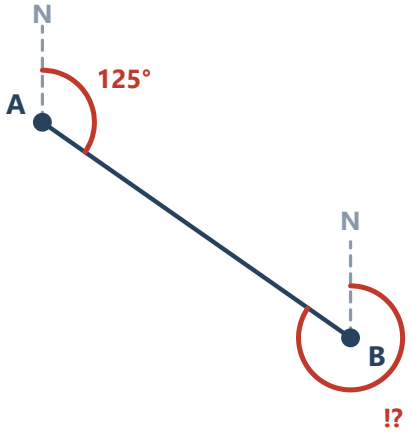
10 Work out each back bearing.

(a) The bearing of B from A is 070°. Find the bearing of A from B.



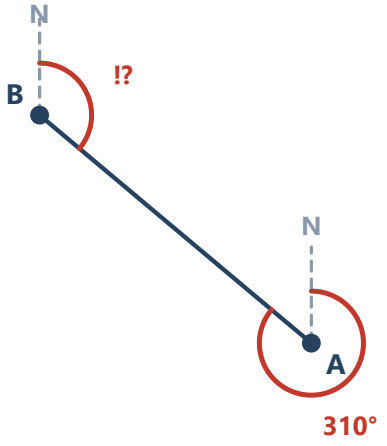
Answer:

(b) The bearing of B from A is 125°. Find the bearing of A from B.



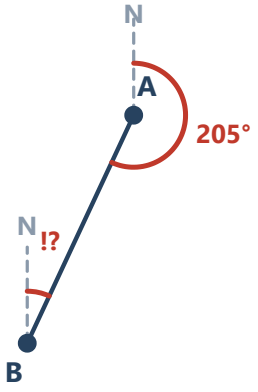
Answer:

(c) The bearing of B from A is 310°. Find the bearing of A from B.



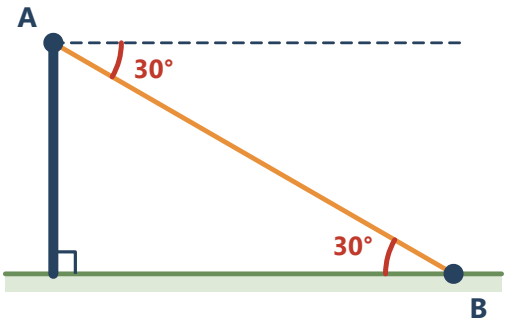
Answer:

(d) The bearing of B from A is 205°. Find the bearing of A from B.



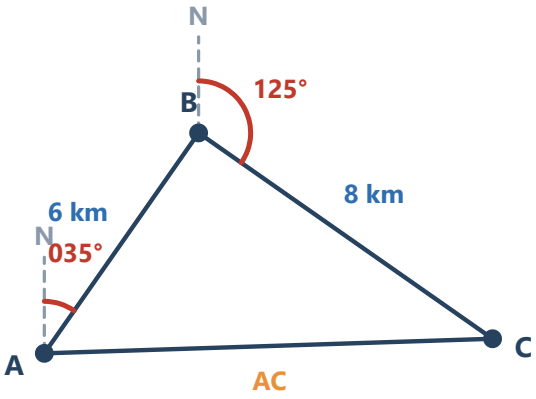
Answer:

11 **From the top A of a cliff, the angle of depression of a boat B is 30°. Explain why the angle of elevation of A from B is also 30°.**



Answer:

12 A hiker walks 6 km on a bearing of 035°, then 8 km on a bearing of 125°. **Show that** the hiker finishes 10 km from the start.



Answer:

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