

The Secret of a Bearing Angle (Pre Calculus 6 3, 6 4 and 6 5 Solving Triangles)

Lesson 235 | Precalculus | Bearing and navigation

<https://www.youtube.com/watch?v=QD5v0IHf3Vg>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

A ship travels 32 km due north, then 16 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

02

A ship travels 18 km due north, then 12 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

03

A ship travels 42 km due north, then 28 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

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04

A ship travels 30 km due north, then 60 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

05

A ship travels 44 km due north, then 28 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

06

A ship travels 77 km due north, then 70 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

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01

A ship travels 32 km due north, then 16 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

Distance $\sqrt{(32)^2 + (16)^2} = 4\sqrt{80}$ km. Bearing $\arctan(\text{east/north}) = \arctan(4/8) \approx 26.6^\circ$, or N 26.6° E.

02

A ship travels 18 km due north, then 12 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

Distance $\sqrt{(18)^2 + (12)^2} = 6\sqrt{13}$ km. Bearing $\arctan(\text{east/north}) = \arctan(2/3) \approx 33.7^\circ$, or N 33.7° E.

03

A ship travels 42 km due north, then 28 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

Distance $\sqrt{(42)^2 + (28)^2} = 7\sqrt{52}$ km. Bearing $\arctan(\text{east/north}) = \arctan(4/6) \approx 33.7^\circ$, or N 33.7° E.

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04

A ship travels 30 km due north, then 60 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

Distance $\sqrt{(30)^2 + (60)^2} = 5\sqrt{180}$ km. Bearing $\arctan(\text{east/north}) = \arctan(12/6) \approx 63.4^\circ$, or N 63.4° E.

05

A ship travels 44 km due north, then 28 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

Distance $\sqrt{(44)^2 + (28)^2} = 4\sqrt{170}$ km. Bearing $\arctan(\text{east/north}) = \arctan(7/11) \approx 32.5^\circ$, or N 32.5° E.

06

A ship travels 77 km due north, then 70 km due east. Find its distance and bearing from the start (bearing measured clockwise from north).

Distance $\sqrt{(77)^2 + (70)^2} = 7\sqrt{221}$ km. Bearing $\arctan(\text{east/north}) = \arctan(10/11) \approx 42.3^\circ$, or N 42.3° E.