

Precalculus · Laws of Sines and Cosines and Triangle Area · Test

Common Core G-SRT.D.9, G-SRT.D.10, G-SRT.D.11 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This precalculus law sines cosines test checks laws of sines and cosines and triangle area in 45 minutes, with 8 questions for a total of 20 points.

This test has 8 questions worth 20 points in total. Show every step, round only at the end, and state units where they apply. A scientific calculator in degree mode is allowed. The test takes about 45 minutes.

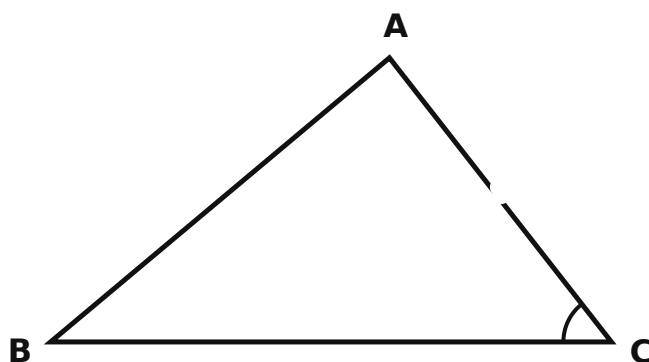
Test information

- **Grade:** Precalculus
- **Chapter:** Laws of Sines and Cosines and Triangle Area
- **Common Core:** G-SRT.D.9, G-SRT.D.10, G-SRT.D.11
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 3 pts; Question 3: 3 pts; Question 4: 2 pts; Question 5: 2 pts; Question 6: 2 pts; Question 7: 3 pts; Question 8: 3 pts)

Precalculus Law Sines Cosines Test: questions 1-5

Question 1: Area with sine (2 points)

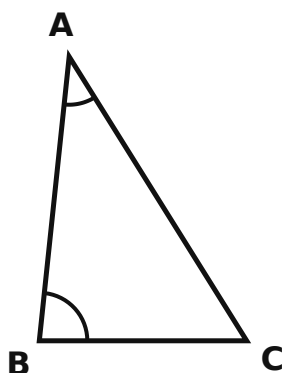
Two sides of a triangle measure 14 cm and 9 cm and the angle between them is 52° . Find the area to the nearest tenth of a square centimeter.



Two sides and the included angle.

Question 2: Law of Sines (3 points)

In triangle ABC , $A = 38^\circ$, $B = 84^\circ$ and $a = 15$.



Triangle ABC.

- Find C . (1 point)
- Find b to the nearest hundredth. (1 point)
- Find c to the nearest hundredth. (1 point)

Question 3: Ambiguous case (3 points)

In triangle ABC , $A = 36^\circ$, $a = 14$ and $b = 20$.

- Show that two different triangles are possible. (1 point)
- Find both possible measures of B to the nearest tenth. (1 point)
- Find the two possible values of c to the nearest hundredth. (1 point)

Question 4: Law of Cosines: find a side (2 points)

In triangle ABC , $a = 13$, $b = 19$ and $C = 47^\circ$. Find c to the nearest hundredth.

Question 5: Law of Cosines: find an angle (2 points)

A triangle has sides 10, 13 and 15. Find its largest angle to the nearest tenth of a degree.

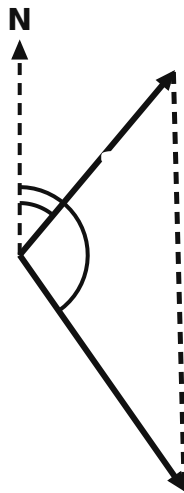
Precalculus Law Sines Cosines Test: questions 6-8

Question 6: Heron's formula (2 points)

Find the area of a triangle with sides 17, 25 and 28.

Question 7: Ships and bearings (3 points)

Ship X leaves a port and sails 25 mi on bearing 040° . Ship Y leaves the same port and sails 30 mi on bearing 145° .



Paths of the two ships.

- Find the angle between the two paths. (1 point)
- Find the distance between the ships to the nearest hundredth of a mile. (2 points)

Question 8: Lot area and height (3 points)

A triangular lot has sides 80 ft, 110 ft and 125 ft.

- Find the area to the nearest square foot. (2 points)
- Find the height to the 125 ft side to the nearest tenth of a foot. (1 point)

How to use this precalculus law sines cosines test

Take this precalculus law sines cosines test without notes, then grade it with the test answer key out of 20 points.

