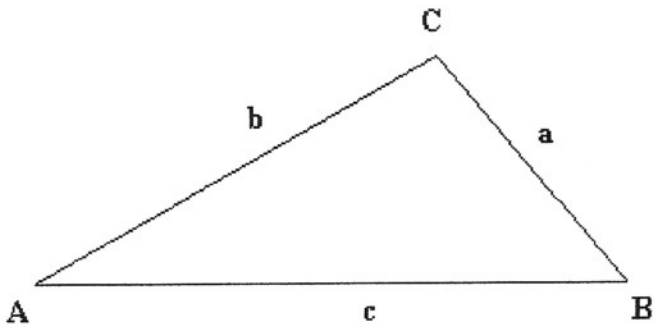
ame: _____ Class: _____ Date: _____ ID: A

Practice Laws of Sine and Cosine

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Given $A = 58°$, $B = 76°$, and $c = 8$, use the Law of Sines to solve the triangle for the value of a. Round answer to two decimal places.



a. $b = 6.79$
b. $b = 9.43$
c. $b = 6.99$
d. $b = 9.15$
e. $b = 5.93$

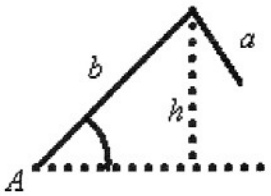
____ 2. Given $C = 113°$, $B = 41°$, and $c = 15$, use the Law of Sines to solve the triangle for the value of a. Round answer to two decimal places.
a. $a = 7.14$
b. $a = 21.05$
c. $a = 5.92$
d. $a = 8.37$
e. $a = 10.02$

____ 3. Given $C = 115°$, $a = 19.9$, and $c = 15.3$, use the Law of Sines to solve the triangle (if possible) for the value of b. If two solutions exist, find both. Round answer to two decimal places.
a. $b = 11.37$ and 15.69
b. $b = 10.44$ and 15.82
c. $b = 13.81$
d. $b = 17.06$
e. not possible

____ 4. Given $A = 16°$, $b = 12$, and $a = 10$, use the Law of Sines to solve the triangle (if possible) for the value of c. If two solutions exist, find both. Round answer to two decimal places.
a. $c = 1.12$ and 17.85
b. $c = 2.10$ and 20.97
c. $c = 19.75$
d. $c = 18.62$
e. not possible

____ 5. Determine a value for b such that a triangle with $A = 48°$ and $a = 11$ has only one solution.
a. $b = 11$
b. $b = 13$
c. $b = 12$
d. $b = 14$
e. $b = 9$

____ 6. Determine a value for b such that a triangle with $A = 58°$ and $a = 10$ has no solution. Round your answer to the nearest hundredth.



a. 31.83
b. 5.90
c. 2.95
d. 11.69
e. 2.36

____ 7. Determine the area of a triangle having the following measurements. Round your answer to two decimal places.

$C = 93°19'$, $a = 11.0$, and $b = 13.5$

a. 59.30 sq. units
b. 66.71 sq. units
c. 88.95 sq. units
d. 74.13 sq. units
e. 81.54 sq. units

____ 8. After a severe storm, three sisters, April, May, and June, stood on their front porch and noticed that the tree in their front yard was leaning 6° from vertical toward the house. From the porch, which is 98 feet away from the base of the tree, they noticed that the angle of elevation to the top of the tree was 24°. Approximate the height of the tree. Round answer to two decimal places.
a. 46.03 feet
b. 41.91 feet
c. 56.03 feet
d. 47.99 feet
e. 45.31 feet

____ 9. A park ranger at point A observes a fire in the direction N 25°36'E. Another ranger at point B, 5 miles due east of A, sites the same fire at N 56°19'W. Determine the distance from point B to the fire. Round answer to two decimal places.

a. 2.18 miles
b. 4.84 miles
c. 4.20 miles
d. 4.55 miles
e. 2.51 miles

____ 10. Given $a = 8$, $b = 7$, and $c = 6$, use the Law of Cosines to solve the triangle for the value of C. Round answer to two decimal places.

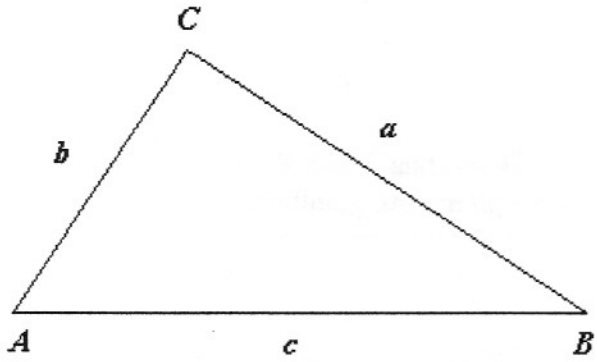


Figure not drawn to scale

a. 46.57°
b. 80.44°
c. 75.52°
d. 57.91°
e. 60.33°

____ 11. Given $A = 108°$, $b = 9$, and $c = 15$, use the Law of Cosines to solve the triangle for the value of a. Round answer to two decimal places.

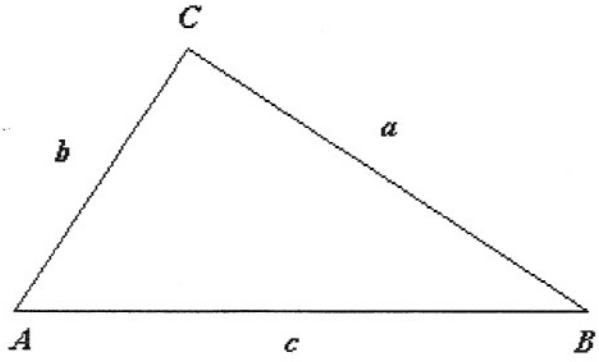


Figure not drawn to scale

a. 14.92
b. 19.13
c. 18.53
d. 19.73
e. 17.33

Name: _____ ID: A

____ 12. Given $a = 6$, $b = 11$, and $c = 9$, use the Law of Cosines to solve the triangle for the value of A. Round answer to two decimal places.

a. 54.85°
b. 60.33°
c. 92.12°
d. 33.03°
e. 80.44°

____ 13. Given $C = 115°$, $a = 12$, and $b = 8$, use the Law of Cosines to solve the triangle for the value of c. Round answer to two decimal places.

a. 17.00
b. 14.13
c. 11.26
d. 16.29
e. 15.57

____ 14. In the figure below, $a = 8$, $b = 5$, and $\theta = 43°$. Use this information to solve the parallelogram for c. The diagonals of the parallelogram are represented by c and d. Round answer to two decimal places.

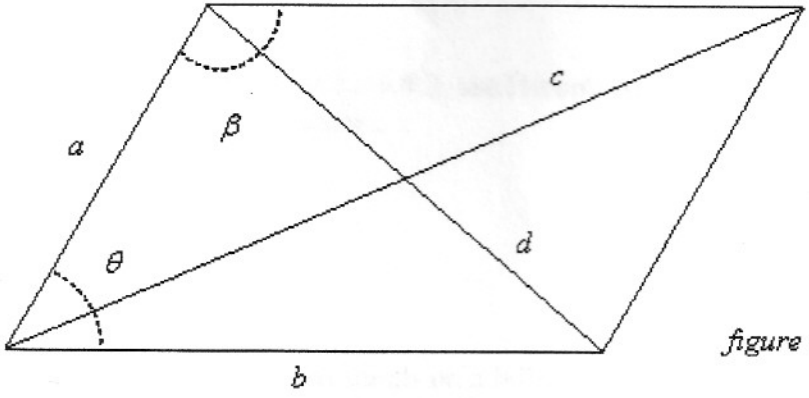


figure not drawn to scale

a. 5.52
b. 8.83
c. 10.49
d. 12.15
e. 9.25

Name: _____ ID: A

____ 15. In the figure below, $a = 7$, $c = 18$, and $d = 10$. Use this information to solve the parallelogram for b. The diagonals of the parallelogram are represented by c and d. Round answer to two decimal places.

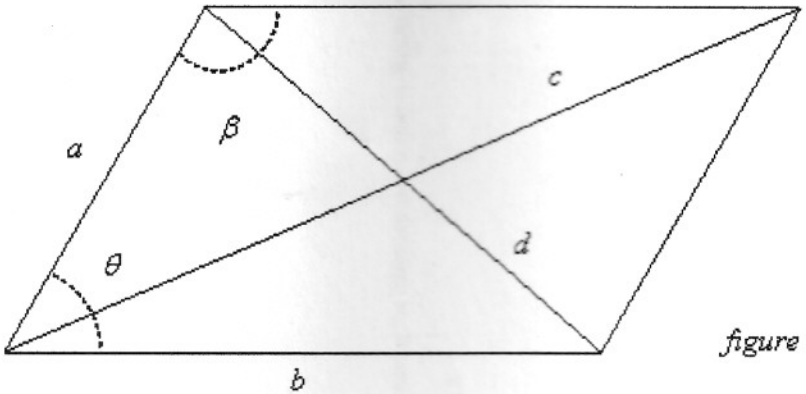


figure not drawn to scale

a. 9.40
b. 11.08
c. 12.77
d. 9.82
e. 6.03

____ 16. Given $a = 7.6$, $b = 9.2$, and $c = 5.3$, use Heron's Area Formula to find the area of $\triangle ABC$. Round answer to two decimal places.

a. 20.21 sq. units
b. 16.76 sq. units
c. 17.36 sq. units
d. 14.02 sq. units
e. 18.44 sq. units

____ 17. A vertical pole 29 feet tall stands on a hillside that makes an angle of 16° with the horizontal. Determine the approximate length of cable that would be needed to reach from the top of the pole to a point 78 feet downhill from the base of the pole. Round answer to two decimal places.

a. 90.40 feet
b. 88.40 feet
c. 82.88 feet
d. 75.35 feet
e. 99.45 feet

Practice Laws of Sine and Cosine
Answer Section

MULTIPLE CHOICE

1.	ANS: B	PTS: 1	OBJ:	Solve triangles using the Law of Sines (ASA)
2.	ANS: A	PTS: 1	OBJ:	Solve triangles using the Law of Sines (AAS)
3.	ANS: E	PTS: 1	OBJ:	Solve triangles using the Law of Sines (SSA - 0 sol)
4.	ANS: B	PTS: 1	OBJ:	Solve triangles using the Law of Sines (SSA- 2 sol)
5.	ANS: E	PTS: 1	OBJ:	Find missing value so that SSA has 1 sol
6.	ANS: A	PTS: 1	OBJ:	Find missing value so that SSA has 0 sol
7.	ANS: D	PTS: 1	OBJ:	Find the area of an oblique triangle
8.	ANS: B	PTS: 1	OBJ:	Application: Law of Sines
9.	ANS: D	PTS: 1	OBJ:	Application: Law of Sines
10.	ANS: A	PTS: 1	OBJ:	Solve triangles using the Law of Cosines (SSS)
11.	ANS: D	PTS: 1	OBJ:	Solve triangles using the Law of Cosines (SAS)
12.	ANS: D	PTS: 1	OBJ:	Solve triangles using the Law of Cosines (SSS) - no figure
13.	ANS: A	PTS: 1	OBJ:	Solve triangles using the Law of Cosines (SAS) - no figure
14.	ANS: D	PTS: 1	OBJ:	Solve figures for missing values using the Law of Cosines
15.	ANS: C	PTS: 1	OBJ:	Solve figures for missing values using the Law of Cosines
16.	ANS: A	PTS: 1	OBJ:	Use Heron's Formula to determine area of triangles
17.	ANS: A	PTS: 1	OBJ:	Application: Law of Cosines