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Course: CA&T Internet (70263)
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Assignment: 7.3 Area of Polygons Using
Trigonometry

1. Complete the following statement.

A triangle with base b and height h has area = _____.

Choose the correct answer below.

- ☒ **A.** A triangle with base b and height h has area = $\frac{1}{2}bh$.
- ☐ **B.** A triangle with base b and height h has area = bh .
- ☐ **C.** A triangle with base b and height h has area = $2(b + h)$.
- ☐ **D.** A triangle with base b and height h has area = $\frac{b + h}{2}$.

2. Select the correct choice that completes the sentence below.

The area of an SAS triangle ABC with sides a and c is $K = \frac{1}{2}ac \sin B$.

3. Find the exact value of the area of the SAS triangle ABC.

$$A = 60^\circ, b = 7, c = 5$$

The area of the triangle is $\frac{35\sqrt{3}}{4}$ square units.

(Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression.)

4. Find the exact value of the area of the SAS triangle ABC.

$$C = 135^\circ, a = 7, b = 4$$

The area of the triangle is $7\sqrt{2}$ square units.

(Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression.)

5. Find the area of the SAS triangle.

$$B = 37^\circ, a = 22 \text{ km}, c = 16 \text{ km}$$

What is the area of the triangle?

$$K = 105.9 \text{ sq km}$$

(Round to the nearest tenth as needed.)

6. Find the area of the triangle ABC.

$$C = 130.8^\circ, a = 45.3 \text{ ft and } b = 36.3 \text{ ft}$$

The area is 622.4 square ft.

(Simplify your answer. Type an integer or decimal rounded to the nearest tenth as needed.)

7. Find the area of the triangle ABC.

$$A = 44.7^\circ \quad B = 38.8^\circ \quad c = 26.9 \text{ m}$$

What is the area of the triangle?

$$160.5 \text{ m}^2 \text{ (Round to the nearest tenth as needed.)}$$

8. Find the area of AAS triangle ABC.

$$b = 15.1 \text{ yd}, A = 65^\circ, B = 38^\circ$$

The area of the triangle is 163.5 square yards.

(Round to the nearest tenth as needed.)

9. Find the area K of the triangle specified below.

$$a = 4, \quad b = 6, \quad c = 9$$

The area K is square units.

(Do not round until the final answer. Then round to two decimal places as needed.)

10. Find the area of the triangle with the given side lengths.

$$a = 4.1, \quad b = 8.3, \quad c = 10.4$$

What is the area of the triangle?

(Round to the nearest tenth.)

11. Find an angle θ between the sides a and b of a triangle ABC with the given area K.

$$K = 72, \quad a = 18, \quad b = 16$$

Select the correct choice below and, if necessary, fill in the answer box(es) to complete your choice.

- ☐ A. $\theta =$ $^\circ$
- ☒ B. $\theta =$ $^\circ$ and $\theta =$ $^\circ$
(Use ascending order.)
- ☐ C. There is no solution.

12. The dimensions of a triangular lot are 189 feet by 106 feet by 186 feet. If the price of such land is \$3 per square foot, how much does the lot cost?

The lot costs \$.

(Do not round until the final answer. Then round to the nearest cent as needed.)

13. This question has been removed from this assignment by your instructor; you have received full credit.

14. This question has been removed from this assignment by your instructor; you have received full credit.

15. Watch the video and then solve the problem given below.

[Click here to watch the video.](#)¹

Find the area of a triangular lawn with side lengths 10 feet, 18 feet, and 17 feet.

The area of the lawn is approximately square feet.

(Round to the nearest hundredth as needed.)

1: http://mediaplayer.pearsoncmg.com/assets/8CUSXrLPFs2ls_PxPG9fjO9o2xNd_t8G?clip=6

16. Watch the video and then solve the problem below.

[Click here to watch the video.](#)²

Find the area of triangle ABC with $a = 12$ feet, $b = 17$ feet, and $C = 85^\circ$.

The area of the triangle is about square feet.

(Type an integer or decimal rounded to two decimal places as needed.)

2: <http://mediaplayer.pearsoncmg.com/assets/w7lukvZNVk8hZMIG0zGiyTCvV6WRvzds>

17. Watch the video and then solve the problem below.

[Click here to watch the video.](#)³

Find the exact area of triangle ABC with $a = 5$ inches, $b = 8$ inches, and $c = 11$ inches.

The area of the triangle is square inches.

(Simplify your answer, including any radicals.)

3: http://mediaplayer.pearsoncmg.com/assets/8CUSXrLPFs2ls_PxPG9fjO9o2xNd_t8G?clip=5