

A2.A.74: Using Trigonometry to Find Area 2: Determine the area of a triangle or a parallelogram, given the measure of two sides and the included angle

- 1 Jack is planting a triangular rose garden. The lengths of two sides of the plot are 8 feet and 12 feet, and the angle between them is 87° . Which expression could be used to find the area of this garden?
- 2 If the vertex angle of an isosceles triangle measures 30° and each leg measures 4, the area of the triangle is
- 3 The vertex angle of isosceles triangle ABC measures 30° , and each leg has length 20. What is the area of $\triangle ABC$?
- 4 In $\triangle ABC$, $b = 2$, $c = 4$, and $m\angle A = 30$. The area of $\triangle ABC$ is
- 5 In $\triangle ABC$, side a is twice as long as side b and $m\angle C = 30$. In terms of b , the area of $\triangle ABC$ is
- 6 The sides of a triangle measure 6 and 8, and the measure of the included angle is 150° . The area of the triangle is
- 7 If $m\angle B = 60$, $a = 6$, and $c = 10$, what is the area of $\triangle ABC$?
- 8 In isosceles triangle ABC , $\overline{AB} \cong \overline{BC}$, $m\angle B = 45$, and $AB = 3\sqrt{2}$. The area of the triangle is
- 9 In $\triangle ABC$, $a = 8$, $b = 9$, and $m\angle C = 135$. What is the area of $\triangle ABC$?
- 10 In $\triangle ABC$, $m\angle C = 30$ and $a = 8$. If the area of the triangle is 12, what is the length of side b ?

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Answer Section

1 ANS:

$$\frac{1}{2} \cdot 8 \cdot 12 \cdot \sin 87^\circ$$

PTS: 2

REF: 060704b

2 ANS:

4

PTS: 2

REF: 010127siii

3 ANS:

100

PTS: 2

REF: 089326siii

4 ANS:

2

PTS: 2

REF: 089917siii

5 ANS:

$$0.5b^2$$

PTS: 2

REF: 069729siii

6 ANS:

12

PTS: 2

REF: 088623siii

7 ANS:

$$15\sqrt{3}$$

PTS: 2

REF: 089623siii

8 ANS:

$$\frac{9\sqrt{2}}{2}$$

PTS: 2

REF: 089833siii

9 ANS:

$$18\sqrt{2}$$

PTS: 2

REF: 019835siii

10 ANS:

6

PTS: 2

REF: 080120siii