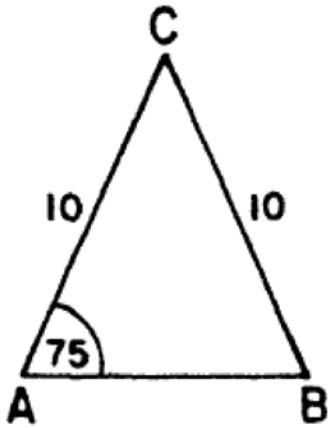


G.SRT.D.9: Using Trigonometry to Find Area 2

1 In $\triangle ABC$, $a = 6$, $b = 8$, and $\sin C = \frac{1}{4}$. Find the area of $\triangle ABC$.

2 In the accompanying figure of $\triangle ABC$, $a = 10$, $b = 10$, and $m\angle A = 75$. Find the area of $\triangle ABC$.



3 Find the area of triangle ABC if $a = 12$, $b = 15$, and $m\angle C = 30$.

4 In $\triangle ABC$, $a = 12$, $b = 8$, and $m\angle C = 30$. Find the area of $\triangle ABC$.

5 In $\triangle PQR$, $PQ = 5$ cm, $QR = 6$ cm, and $m\angle Q = 30$. Find the area of $\triangle PQR$ in squares centimeters.

6 Find the area of $\triangle ABC$ if $m\angle A = 30$, $b = 10$, and $c = 5$.

7 If $m\angle A = 30$, side $b = 8$, and side $c = 4$, find the area of $\triangle ABC$.

8 In $\triangle ABC$, $a = 8$, $b = 7$, and $m\angle C = 30$. What is the area of $\triangle ABC$?

9 In $\triangle ABC$, $a = 6$, $b = 10$, and $m\angle C = 30$. Find the area of $\triangle ABC$.

10 In $\triangle ABC$, $a = 1.3$, $b = 2.4$, and $m\angle C = 30$. Find the area of $\triangle ABC$.

11 The triangular top of a table has two sides of 14 inches and 16 inches, and the angle between the sides is 30° . Find the area of the tabletop, in square inches.

12 In $\triangle ABC$, $m\angle A = 150$, $b = 8$, and $c = 10$. Find the number of square units in the area of $\triangle ABC$.

- 13 In $\triangle ABC$, $a = 6$, $c = 4$, and $m\angle B = 150$. Find the number of square units in the area of the triangle.
- 14 Find the area of $\triangle ABC$ if $a = 6$, $b = 12$, and $m\angle C = 150$.
- 15 In $\triangle NEW$, $m\angle N = 60$, $NE = 8$, and $NW = 6$. Find the area of $\triangle NEW$, in *simplest radical form*.
- 16 In $\triangle ABC$, $m\angle A = 60$, $b = 4$, and $c = 4$. What is the area of $\triangle ABC$, in *simplest radical form*?
- 17 Find, in radical form, the area of $\triangle ABC$ if $a = 6$, $b = 6$, and $m\angle C = 45$.
- 18 In $\triangle ABC$, $m\angle C = 30$ and $a = 24$. If the area of the triangle is 42, what is the length of side b ?
- 19 In $\triangle ABC$, $m\angle B = 30$ and side $a = 6$. If the area of the triangle is 12, what is the length of side c .
- 20 The area of $\triangle ABC$ is 20. If $a = 10$ and $b = 8$, find the number of degrees in the measure of acute angle C .
- 21 In $\triangle ABC$, $a = 8$ and $b = 8$. If the area of $\triangle ABC$ is 16, find $m\angle C$.

G.SRT.D.9: Using Trigonometry to Find Area 2
Answer Section

1 ANS:
6

REF: 018904siii

2 ANS:
25

REF: 068112siii

3 ANS:
45

REF: 088510siii

4 ANS:
24

REF: 068606siii

5 ANS:
7.5

REF: 088710siii

6 ANS:
 $12\frac{1}{2}$

REF: 068809siii

7 ANS:
8

REF: 010403siii

8 ANS:
14

REF: 069610siii

9 ANS:
15

REF: 080007siii

10 ANS:
0.78

REF: 060004siii

11 ANS:

$$56. K = \frac{1}{2}(14)(16) \sin 30^\circ = 56$$

REF: 080324b

12 ANS:

20

REF: 068410siii

13 ANS:

6

REF: 018509siii

14 ANS:

18

REF: 019006siii

15 ANS:

$12\sqrt{3}$

REF: 089407siii

16 ANS:

$4\sqrt{3}$

REF: 019509siii

17 ANS:

$9\sqrt{2}$

REF: 069812siii

18 ANS:

7

REF: 060108siii

19 ANS:

8

REF: 060306siii

20 ANS:

30

REF: 089512siii

21 ANS:

30

REF: 069413siii