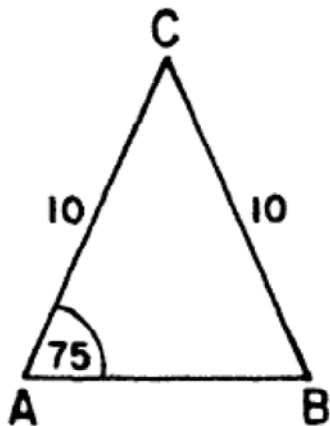


**A2.A.74: Using Trigonometry to Find Area 3: Determine the area of a triangle or a parallelogram, given the measure of two sides and the included angle**

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

- 2 In the accompanying figures 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  $30^\circ$ . 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  $m\angle C$ .

**A2.A.74: Using Trigonometry to Find Area 3: Determine the area of a triangle or a parallelogram, given the measure of two sides and the included angle**

**Answer Section**

- 1 ANS:  
6  
  
PTS: 2 REF: 018904siii
- 2 ANS:  
25  
  
PTS: 2 REF: 068112b
- 3 ANS:  
45  
  
PTS: 2 REF: 088510siii
- 4 ANS:  
24  
  
PTS: 2 REF: 068606siii
- 5 ANS:  
7.5  
  
PTS: 2 REF: 088710siii
- 6 ANS:  
 $12\frac{1}{2}$   
  
PTS: 2 REF: 068809siii
- 7 ANS:  
8  
  
PTS: 2 REF: 010403siii
- 8 ANS:  
14  
  
PTS: 2 REF: 069610siii
- 9 ANS:  
15  
  
PTS: 2 REF: 080007siii
- 10 ANS:  
0.78  
  
PTS: 2 REF: 060004siii

- 11 ANS:  
56
- PTS: 2 REF: 080324b
- 12 ANS:  
20
- PTS: 2 REF: 068410siii
- 13 ANS:  
6
- PTS: 2 REF: 018509siii
- 14 ANS:  
18
- PTS: 2 REF: 019006siii
- 15 ANS:  
 $12\sqrt{3}$
- PTS: 2 REF: 089407siii
- 16 ANS:  
 $4\sqrt{3}$
- PTS: 2 REF: 019509siii
- 17 ANS:  
 $9\sqrt{2}$
- PTS: 2 REF: 069812siii
- 18 ANS:  
7
- PTS: 2 REF: 060108siii
- 19 ANS:  
8
- PTS: 2 REF: 060306siii
- 20 ANS:  
30
- PTS: 2 REF: 089512siii
- 21 ANS:  
30
- PTS: 2 REF: 069413siii