

Area of a Triangle Using $\frac{1}{2}ab \sin C$ *fluency*



Find the area to 1 decimal place. Lengths are in cm.

1 $a = 5, b = 7, C = 40^\circ$

2 $a = 8, b = 6, C = 55^\circ$

3 $a = 10, b = 4, C = 120^\circ$

4 $a = 9, b = 9, C = 72^\circ$

5 $a = 3.5, b = 6, C = 100^\circ$

6 $a = 12, b = 15, C = 28^\circ$



Find the exact area. Lengths are in cm.

7 $a = 6, b = 8, C = 30^\circ$

8 $a = 4, b = 6, C = 60^\circ$

9 $a = 10, b = 12, C = 90^\circ$

10 $a = 5, b = 7, C = 150^\circ$

11 $a = 8, b = 3, C = 120^\circ$

12 $a = 2, b = 9, C = 45^\circ$



The area is given. Find the acute angle C to 1 dp. Lengths in cm, areas in cm^2 .

13 $a = 8, b = 10, \text{area } 20$

14 $a = 6, b = 9, \text{area } 15$

15 $a = 12, b = 5, \text{area } 25$

16 $a = 7, b = 7, \text{area } 20$

17 $a = 4.5, b = 8, \text{area } 12$

18 $a = 11, b = 13, \text{area } 60$



The area and angle C are given. Find b . Lengths in cm, areas in cm^2 .

19 $a = 8, C = 30^\circ, \text{area } 24$

20 $a = 5, C = 90^\circ, \text{area } 20$

21 $a = 10, C = 150^\circ, \text{area } 35$

22 $a = 6, C = 60^\circ, \text{area } 6\sqrt{3}$

23 $a = 12, C = 30^\circ, \text{area } 45$

24 $a = 9, C = 90^\circ, \text{area } 54$



Three sides are given. Find the area to 1 dp. Lengths are in cm.

25 $a = 5, b = 6, c = 7$

26 $a = 8, b = 9, c = 10$

27 $a = 4, b = 7, c = 9$

28 $a = 10, b = 10, c = 12$

29 $a = 6, b = 8, c = 11$

30 $a = 3, b = 5, c = 7$