

SAS info:

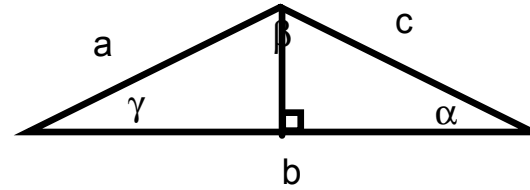
$$A = \frac{1}{2}bh$$

$$h = c \sin \alpha$$

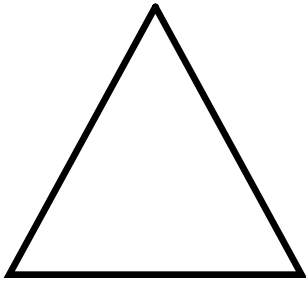
$$A = \frac{1}{2}bc \sin \alpha$$

← Included angle

↙ ↘ Two sides



Works from any angle.



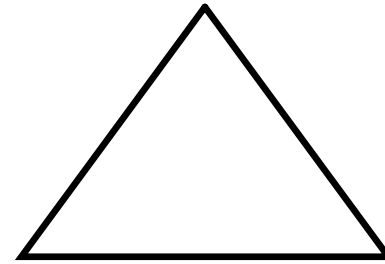
$$A = \frac{1}{2}bh$$

SAS

$$A = \frac{1}{2}ab \sin \gamma$$

$$A = \frac{1}{2}bc \sin \alpha$$

$$A = \frac{1}{2}ac \sin \beta$$



$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

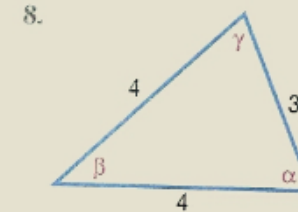
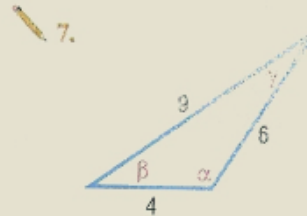
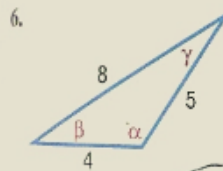
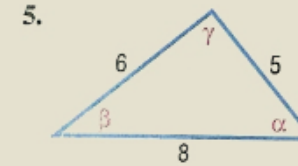
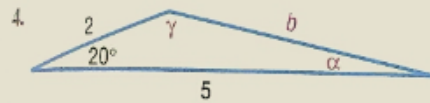
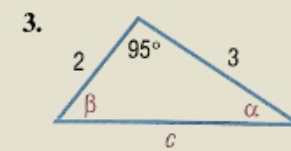
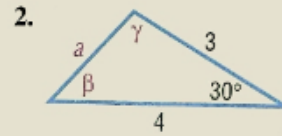
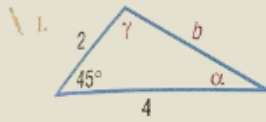
$$\text{where } s = \frac{1}{2}(a+b+c)$$

or

$$s = \frac{\text{perimeter}}{2}$$

SSS	Heron's
SAS	$\frac{1}{2}ab \sin \gamma$
SSA	L.of S. to get other angle(s), then $\frac{1}{2}ab \sin \gamma$
ASA	L.of S. to get another side, then $\frac{1}{2}ab \sin \gamma$
AAS	L.of S. to get another side, then $\frac{1}{2}ab \sin \gamma$
Right triangle	$\frac{1}{2}bh$

In Problems 1–8, find the area of each triangle. Round answers to two decimal places.



In Problems 9–24, find the area of each triangle. Round answers to two decimal places.

9. $a = 3$, $b = 4$, $\gamma = 40^\circ$

10. $a = 2$, $c = 1$, $\beta = 10^\circ$

11. $b = 1$, $c = 3$, $\alpha = 80^\circ$

12. $a = 6$, $b = 4$, $\gamma = 60^\circ$

13. $a = 3$, $c = 2$, $\beta = 110^\circ$

14. $b = 4$, $c = 1$, $\alpha = 120^\circ$

15. $a = 2$, $b = 2$, $\gamma = 50^\circ$

16. $a = 3$, $c = 2$, $\beta = 90^\circ$

17. $a = 12$, $b = 13$, $c = 5$

18. $a = 4$, $b = 5$, $c = 3$

19. $a = 2$, $b = 2$, $c = 2$

20. $a = 3$, $b = 3$, $c = 2$

21. $a = 5$, $b = 8$, $c = 9$

22. $a = 4$, $b = 3$, $c = 6$

23. $a = 10$, $b = 8$, $c = 5$

24. $a = 9$, $b = 7$, $c = 10$

Draw three interlocking circles where every circle's center is on one of the other circles:

Circle A has a radius of 10 in. Its center is on circle C.

Circle B has a radius of 9 in. Its center is on circle A.

Circle C has a radius of 8 in. Its center is on circle B.

Find the area and angles of triangle A, B, C

1	7.2	The Law of Sines	p.547-8(1,5,15,17,23,27,29,31,35,37)
2	7.3	The Law of Cosines	p.555-6(1,7,15,23,25,26,27,29)

Plus 7.3 packet

31. Finding the Length of a Guy Wire The height of a radio tower is 500 feet, and the ground on one side of the tower slopes upward at an angle of 10° (see the figure).

- How long should a guy wire be if it is to connect to the top of the tower and be secured at a point on the sloped side 100 feet from the base of the tower?
- How long should a second guy wire be if it is to connect to the middle of the tower and be secured at a point 100 feet from the base on the flat side?

