

USE A SEPARATE SHEET OF PAPER FOR YOUR WORK!

Part I: Draw a picture for each problem. Then use the information given to determine the number of possible triangles in each situation. Remember, only the ambiguous case (where the given information is SSA) will possibly give you no solution or more than one solution.

Part II: Solve the triangle. Round your answers to the nearest 10th.

1. $A = 70^\circ$, $b = 10$, $a = 12$

2. $A = 42.3^\circ$, $C = 37.8^\circ$, $b = 14.5$

3. $A = 30^\circ$, $b = 10$, $a = 5$

4. $a = 15$, $B = 110^\circ$, $b = 19$

5. $c = 20$, $b = 20$, $B = 49^\circ$

6. $C = 120^\circ$, $c = 15$, $B = 45^\circ$

7. $C = 60^\circ$, $a = 10$, $c = 8$

8. $a = 19$, $C = 93^\circ$, $c = 19$

9. $A = 58^\circ$, $a = 11.4$, $b = 12.8$

10. $A = 24.3^\circ$, $C = 54.6^\circ$, $c = 2.68$

11. $a = 16$, $B = 130^\circ$, $b = 12$

12. $A = 83^\circ 20'$, $C = 54^\circ 36'$, $c = 18.1$

13. $a = 18$, $c = 15$, $C = 45^\circ$

14. $b = 23$, $a = 24$, $A = 35^\circ$

15. $c = 15$, $B = 90^\circ$, $b = 19$

16. $a = 11$, $C = 60^\circ$, $c = 10$

17. $A = 45^\circ$, $b = 49$, $a = 49$

18. $C = 69^\circ$, $c = 10$, $a = 6$

19. $B = 39^\circ$, $a = 17$, $b = 10$

20. $B = 55^\circ 40'$, $b = 20$, $a = 16$

LAW OF SINES WS – ANSWERS

Part I

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|----------|---------|---------|----------|---------|
| 1. one | 2. one | 3. one | 4. one | 5. one |
| 6. one | 7. zero | 8. zero | 9. two | 10. one |
| 11. zero | 12. one | 13. two | 14. one | 15. one |
| 16. two | 17. one | 18. one | 19. zero | 20. one |

Part II

- $B = 51.5^\circ$ $C = 58.5^\circ$ $c = 10.9$
- $B = 99.9^\circ$ $a = 9.9$ $c = 9.0$
- $B = 90^\circ$ $C = 60^\circ$ $c = 8.7$
- $A = 47.9^\circ$ $C = 22.1^\circ$ $c = 7.6$
- $C = 49^\circ$ $A = 82^\circ$ $a = 26.2$
- $A = 15^\circ$ $a = 4.5$ $b = 12.2$
- no triangle
- no triangle
- $B = 72.2^\circ$ $C = 49.8^\circ$ $c = 10.3$ ALSO $B = 107.8^\circ$ $C = 14.2^\circ$ $c = 3.3$
- $B = 101.1^\circ$ $a = 1.4$ $b = 3.2$
- no triangle
- $B = 42^\circ 4'$ $a = 22.1$ $b = 14.9$
- $A = 58.1^\circ$ $B = 76.9^\circ$ $b = 20.7$ ALSO $A = 121.9^\circ$ $B = 13.1^\circ$ $b = 4.8$
- $B = 33.3^\circ$ $C = 111.7^\circ$ $c = 38.9$
- $C = 52.1^\circ$ $A = 37.9^\circ$ $a = 11.7$
- $A = 72.3^\circ$ $B = 47.7^\circ$ $b = 8.5$ ALSO $A = 107.7^\circ$ $B = 12.3^\circ$ $b = 2.5$
- $B = 45^\circ$ $C = 90^\circ$ $c = 69.3$
- $A = 34.1^\circ$ $B = 76.9^\circ$ $b = 10.4$
- no triangle
- $A = 41^\circ 21'$ $C = 82^\circ 59'$ $c = 24.0$