

## Law of Sines

Date \_\_\_\_\_

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**Solve each triangle. Round your answers to the nearest tenth.**

1) In  $\triangle ZXY$ ,  $m\angle Z = 59^\circ$ ,  $m\angle X = 83^\circ$ ,  $z = 25$

2) In  $\triangle TRS$ ,  $m\angle T = 98^\circ$ ,  $s = 20$ ,  $t = 7$

3) In  $\triangle RST$ ,  $m\angle R = 33^\circ$ ,  $m\angle T = 68^\circ$ ,  $t = 17$

4) In  $\triangle CAB$ ,  $m\angle C = 116^\circ$ ,  $b = 15$ ,  $c = 23$

5) In  $\triangle TRS$ ,  $m\angle T = 52^\circ$ ,  $m\angle S = 88^\circ$ ,  $r = 9$

6) In  $\triangle KHP$ ,  $m\angle K = 34^\circ$ ,  $m\angle P = 53^\circ$ ,  $h = 25$

7) In  $\triangle DEF$ ,  $m\angle D = 16^\circ$ ,  $f = 22$ ,  $d = 17$

8) In  $\triangle QRP$ ,  $m\angle Q = 155^\circ$ ,  $m\angle P = 11^\circ$ ,  $p = 19$

9) In  $\triangle ABC$ ,  $m\angle A = 99^\circ$ ,  $m\angle C = 69^\circ$ ,  $c = 18$

10) In  $\triangle TRS$ ,  $m\angle T = 62^\circ$ ,  $s = 6$ ,  $t = 5$

11) In  $\triangle TRS$ ,  $m\angle T = 88^\circ$ ,  $m\angle R = 27^\circ$ ,  $t = 22$

12) In  $\triangle XYZ$ ,  $m\angle X = 24^\circ$ ,  $z = 13$ ,  $x = 6$

13) In  $\triangle XYZ$ ,  $m\angle X = 73^\circ$ ,  $z = 29$ ,  $x = 28$

14) In  $\triangle KHP$ ,  $m\angle P = 42^\circ$ ,  $p = 10$ ,  $h = 7$

15) In  $\triangle QRP$ ,  $m\angle Q = 72^\circ$ ,  $m\angle R = 24^\circ$ ,  $q = 21$

16) In  $\triangle ZXY$ ,  $m\angle Z = 59^\circ$ ,  $y = 28$ ,  $z = 25$

## Answers to Law of Sines

- 1)  $m\angle Y = 38^\circ$ ,  $y = 18$ ,  $x = 28.9$       2) Not a triangle      3)  $m\angle S = 79^\circ$ ,  $r = 10$ ,  $s = 18$   
4)  $m\angle A = 28.1^\circ$ ,  $m\angle B = 35.9^\circ$ ,  $a = 12.1$       5)  $m\angle R = 40^\circ$ ,  $s = 14$ ,  $t = 11$   
6)  $m\angle H = 93^\circ$ ,  $p = 20$ ,  $k = 14$       7)  $m\angle E = 143.1^\circ$ ,  $m\angle F = 20.9^\circ$ ,  $e = 37$   
Or  $m\angle E = 4.9^\circ$ ,  $m\angle F = 159.1^\circ$ ,  $e = 5.3$   
8)  $m\angle R = 14^\circ$ ,  $q = 42.1$ ,  $r = 24.1$       9)  $m\angle B = 12^\circ$ ,  $a = 19$ ,  $b = 4$       10) Not a triangle  
11)  $m\angle S = 65^\circ$ ,  $s = 20$ ,  $r = 10$       12)  $m\angle Y = 94.2^\circ$ ,  $m\angle Z = 61.8^\circ$ ,  $y = 14.7$   
Or  $m\angle Y = 37.8^\circ$ ,  $m\angle Z = 118.2^\circ$ ,  $y = 9$   
13)  $m\angle Y = 24.9^\circ$ ,  $m\angle Z = 82.1^\circ$ ,  $y = 12.3$       14)  $m\angle K = 110.1^\circ$ ,  $m\angle H = 27.9^\circ$ ,  $k = 14$   
Or  $m\angle Y = 9.1^\circ$ ,  $m\angle Z = 97.9^\circ$ ,  $y = 4.6$   
15)  $m\angle P = 84^\circ$ ,  $p = 22$ ,  $r = 9$       16)  $m\angle X = 47.3^\circ$ ,  $m\angle Y = 73.7^\circ$ ,  $x = 21.4$   
Or  $m\angle X = 14.7^\circ$ ,  $m\angle Y = 106.3^\circ$ ,  $x = 7.4$