

The Law of Sines

Date _____ Period _____

State the number of possible triangles that can be formed using the given measurements.

1) $m\angle A = 31^\circ$, $c = 20$ mi, $a = 16$ mi

2) $m\angle B = 82^\circ$, $a = 34$ m, $b = 22$ m

3) $m\angle B = 110^\circ$, $b = 11$ m, $a = 4$ m

4) $m\angle A = 64^\circ$, $c = 33$ in, $a = 32$ in

Find each measurement indicated. Round your answers to the nearest tenth.

5) $m\angle A = 64^\circ$, $m\angle B = 98^\circ$, $a = 29$ mi
Find b

6) $m\angle A = 57^\circ$, $c = 35$ cm, $a = 33$ cm
Find b

7) $m\angle C = 128^\circ$, $b = 35$ in, $c = 35$ in
Find a

8) $m\angle C = 90^\circ$, $m\angle B = 30^\circ$, $b = 15$ in
Find c

9) In $\triangle TRS$, $m\angle S = 118^\circ$, $s = 16$ ft, $r = 5$ ft
Find $m\angle R$

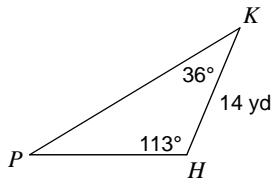
10) In $\triangle KHP$, $m\angle K = 27^\circ$, $p = 35$ m, $k = 18$ m
Find $m\angle P$

11) In $\triangle RST$, $m\angle R = 153^\circ$, $t = 29$ km, $r = 16$ km
Find $m\angle S$

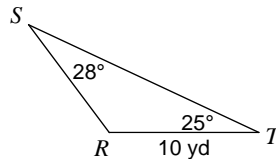
12) In $\triangle KHP$, $m\angle K = 55^\circ$, $p = 18$ m, $k = 27$ m
Find $m\angle P$

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

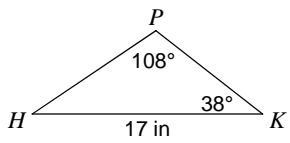
13)



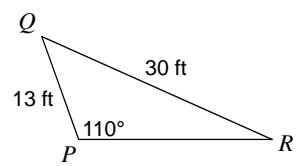
14)



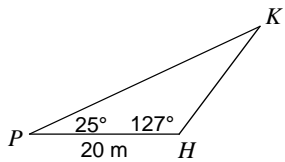
15)



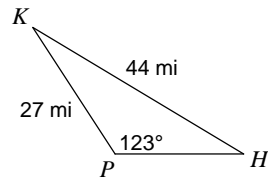
16)



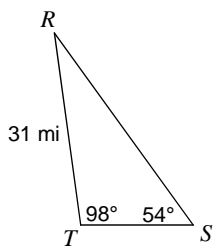
17)



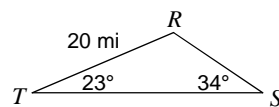
18)



19)

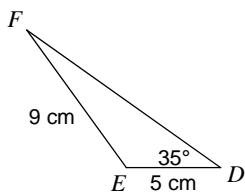


20)

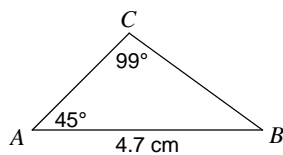


Find the area of each triangle to the nearest tenth.

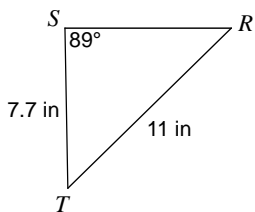
21)



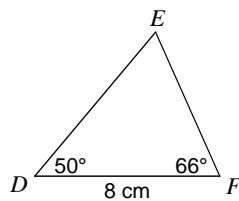
22)



23)



24)



The Law of Sines

State the number of possible triangles that can be formed using the given measurements.

1) $m\angle A = 31^\circ$, $c = 20$ mi, $a = 16$ mi

Two triangles

2) $m\angle B = 82^\circ$, $a = 34$ m, $b = 22$ m

None

3) $m\angle B = 110^\circ$, $b = 11$ m, $a = 4$ m

One triangle

4) $m\angle A = 64^\circ$, $c = 33$ in, $a = 32$ in

Two triangles

Find each measurement indicated. Round your answers to the nearest tenth.

5) $m\angle A = 64^\circ$, $m\angle B = 98^\circ$, $a = 29$ mi

Find b

32 mi

6) $m\angle A = 57^\circ$, $c = 35$ cm, $a = 33$ cm

Find b

34.1 cm or 4 cm

7) $m\angle C = 128^\circ$, $b = 35$ in, $c = 35$ in

Find a

Not a triangle

8) $m\angle C = 90^\circ$, $m\angle B = 30^\circ$, $b = 15$ in

Find c

30 in

9) In $\triangle TRS$, $m\angle S = 118^\circ$, $s = 16$ ft, $r = 5$ ft

Find $m\angle R$

16°

10) In $\triangle KHP$, $m\angle K = 27^\circ$, $p = 35$ m, $k = 18$ m

Find $m\angle P$

62° or 118°

11) In $\triangle RST$, $m\angle R = 153^\circ$, $t = 29$ km, $r = 16$ km

Find $m\angle S$

Not a triangle

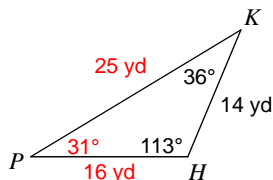
12) In $\triangle KHP$, $m\angle K = 55^\circ$, $p = 18$ m, $k = 27$ m

Find $m\angle P$

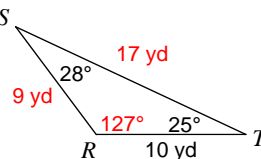
33.1°

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

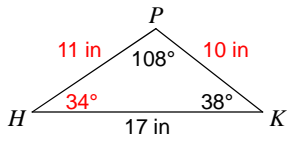
13)



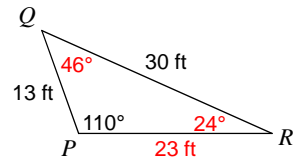
14)



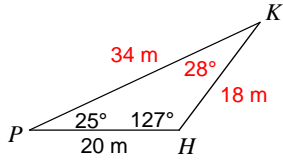
15)



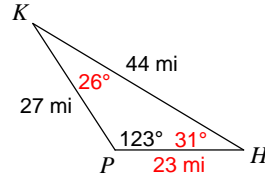
16)



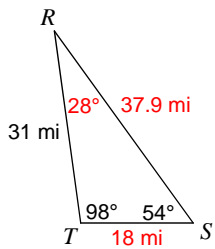
17)



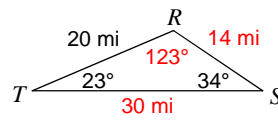
18)



19)

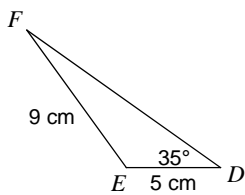


20)



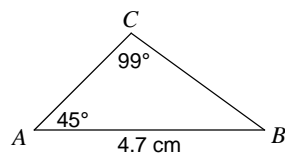
Find the area of each triangle to the nearest tenth.

21)



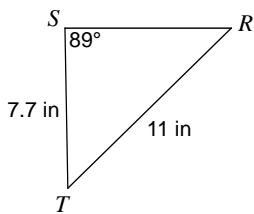
18.1 cm²

22)



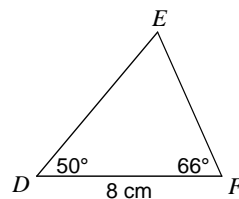
4.7 cm²

23)



30.8 in²

24)



24.8 cm²