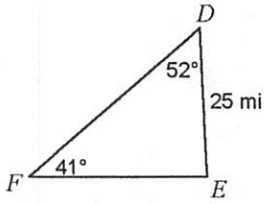


Section 11.4 Law of Sines

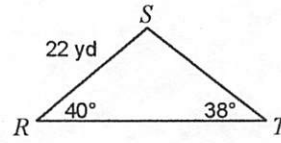
Date _____ Period _____

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

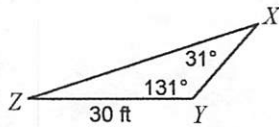
1)



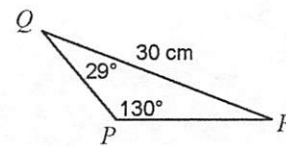
2)



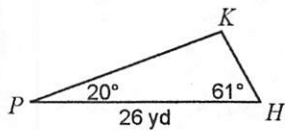
3)



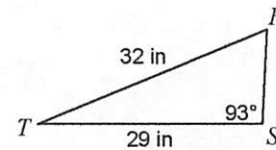
4)



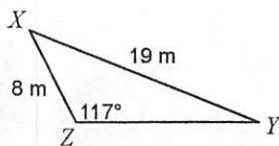
5)



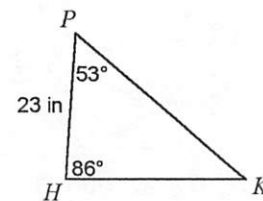
6)



7)



8)



9) $m\angle A = 87^\circ$, $m\angle B = 51^\circ$, $a = 9$ mi

10) $m\angle B = 38^\circ$, $a = 10$ ft, $b = 21$ ft

11) $m\angle B = 48^\circ$, $m\angle C = 98^\circ$, $b = 12$ in

12) $m\angle C = 137^\circ$, $m\angle A = 17^\circ$, $c = 28$ km

13) $m\angle B = 58^\circ$, $m\angle C = 29^\circ$, $b = 28$ in

14) $m\angle B = 138^\circ$, $a = 24$ km, $b = 43$ km

15) $m\angle C = 98^\circ$, $b = 26$ mi, $c = 37$ mi

16) $m\angle A = 91^\circ$, $m\angle B = 28^\circ$, $c = 28$ km

17) Juan and Romella are standing at the seashore 10 miles apart. The coastline is a straight line between them. Both can see the same ship in the water. The angle between the coastline and the line between the ship and Juan is 35 degrees. The angle between the coastline and the line between the ship and Romella is 45 degrees. How far is the ship from Juan?

18) Tom, Dick, and Harry are camping in their tents. If the distance between Tom and Dick is 153 feet, the distance between Tom and Harry is 201 feet, and the distance between Dick and Harry is 175 feet, what is the angle between Dick, Harry, and Tom?

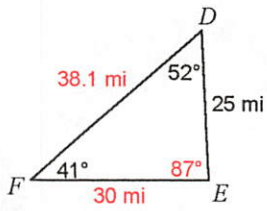
19) Flights 104 and 217 are both approaching O'Hare International Airport from directions directly opposite one another and at an altitude of 2.5 miles. The pilot on flight 104 reports an angle of depression of $17^\circ 47'$ to the tower, and the pilot on flight 217 reports an angle of depression of $12^\circ 39'$ to the tower. Calculate the distance between the planes.

Section 11.4 Law of Sines

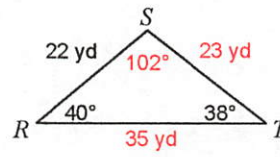
Date _____ Period _____

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

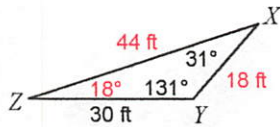
1)



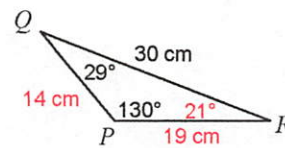
2)



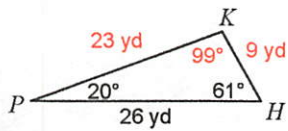
3)



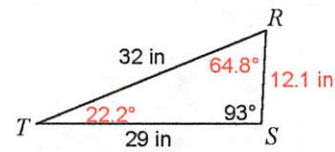
4)



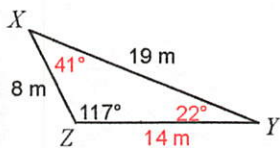
5)



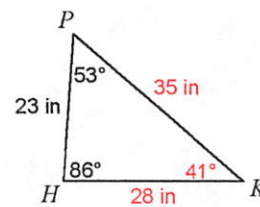
6)



7)



8)



9) $m\angle A = 87^\circ, m\angle B = 51^\circ, a = 9$ mi

$m\angle C = 42^\circ, b = 7$ mi, $c = 6$ mi

10) $m\angle B = 38^\circ, a = 10$ ft, $b = 21$ ft

$m\angle C = 125^\circ, m\angle A = 17^\circ, c = 27.9$ ft

11) $m\angle B = 48^\circ, m\angle C = 98^\circ, b = 12$ in

$m\angle A = 34^\circ, c = 16$ in, $a = 9$ in

12) $m\angle C = 137^\circ, m\angle A = 17^\circ, c = 28$ km

$m\angle B = 26^\circ, b = 18$ km, $a = 12$ km

13) $m\angle B = 58^\circ, m\angle C = 29^\circ, b = 28$ in

$m\angle A = 93^\circ, c = 16$ in, $a = 33$ in

14) $m\angle B = 138^\circ, a = 24$ km, $b = 43$ km

$m\angle C = 20.1^\circ, m\angle A = 21.9^\circ, c = 22.1$ km

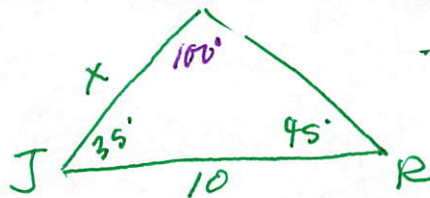
15) $m\angle C = 98^\circ, b = 26$ mi, $c = 37$ mi

$m\angle A = 37.9^\circ, m\angle B = 44.1^\circ, a = 23$ mi

16) $m\angle A = 91^\circ, m\angle B = 28^\circ, c = 28$ km

$m\angle C = 61^\circ, a = 32$ km, $b = 15$ km

17) Juan and Romella are standing at the seashore 10 miles apart. The coastline is a straight line between them. Both can see the same ship in the water. The angle between the coastline and the line between the ship and Juan is 35 degrees. The angle between the coastline and the line between the ship and Romella is 45 degrees. How far is the ship from Juan?



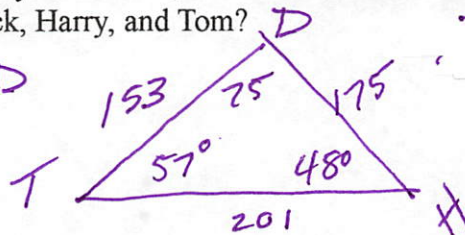
$$\frac{\sin 100}{10} = \frac{\sin 45}{x}$$

7.1 miles

18) Tom, Dick, and Harry are camping in their tents. If the distance between Tom and Dick is 153 feet, the distance between Tom and Harry is 201 feet, and the distance between Dick and Harry is 175 feet, what is the angle between Dick, Harry, and Tom?

$$201^2 = 153^2 + 175^2 - 2(153)(175)\cos D$$

$$D \approx 75^\circ$$

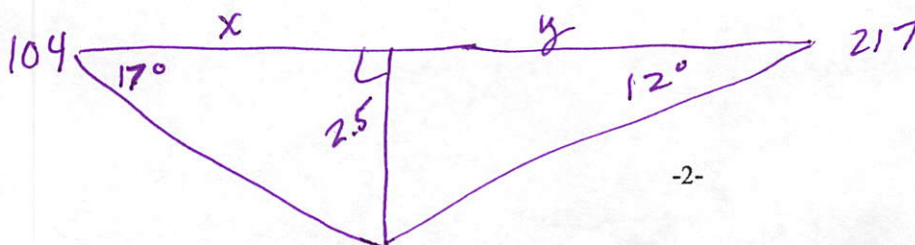


$$\frac{\sin 75}{201} = \frac{\sin T}{175}$$

$T = 57^\circ$

19) Flights 104 and 217 are both approaching O'Hare International Airport from directions directly opposite one another and at an altitude of 2.5 miles. The pilot on flight 104 reports an angle of depression of 17° to the tower, and the pilot on flight 217 reports an angle of depression of 12° to the tower. Calculate the distance between the planes.

20.6 miles



$$\sin 17 = \frac{2.5}{x}$$

$x = 8.6$

$$\sin 12 = \frac{2.5}{y}$$

$y = 12$