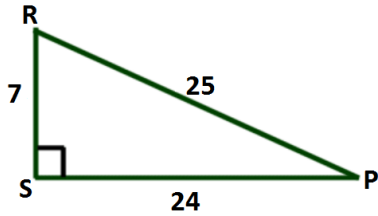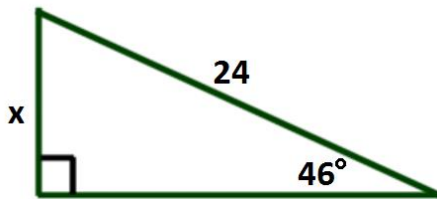**Skill Check**

1. Please find $\sin R$, $\cos R$, and $\tan R$. Write your answers as fractions in simplest form **and** as decimals rounded to four places as necessary.
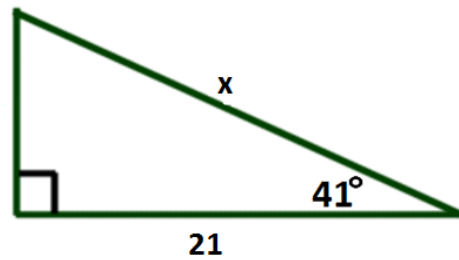

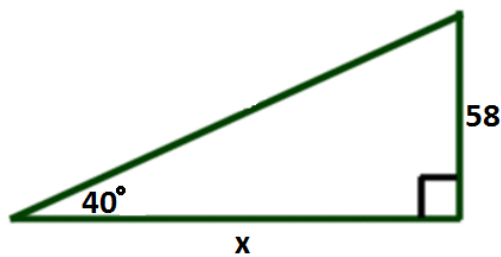**For questions #2 – 4, please find the value of x rounded to the nearest tenth.**
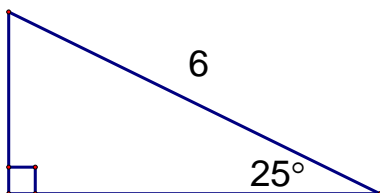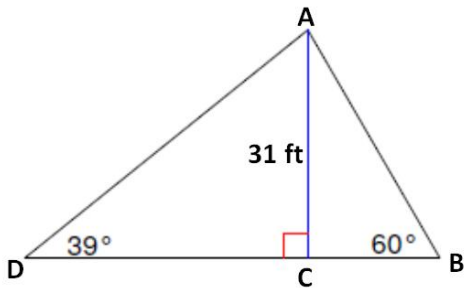
2.

3.

4.

5. Please find the perimeter and area of the triangle below. Round to the nearest tenth if necessary.
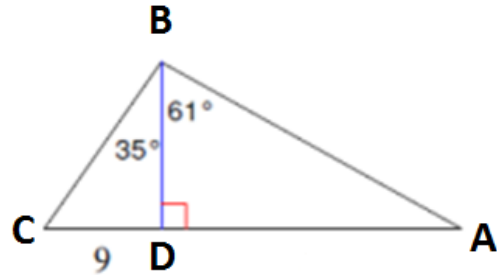
For questions #6 – 7, please solve for the indicated side of the triangle. Round to the nearest tenth.
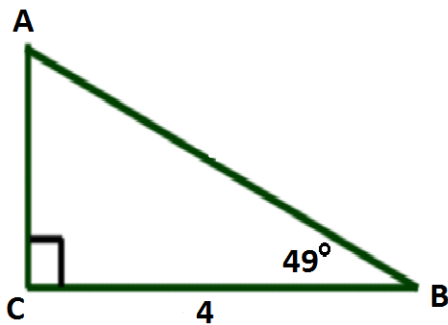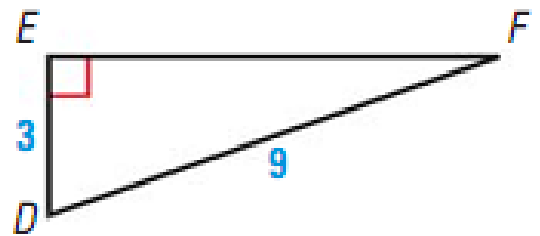
6. $\overline{DB}$

7. $\overline{AB}$

For questions #8 – 9, please solve the right triangles.

8.

9.

<u>Applications</u> – Please draw a diagram and round all answers to the nearest tenth.

10. A safety regulation states that the maximum angle of elevation for a rescue ladder is $72°$. A fire department's longest ladder is 110 feet. What is the maximum safe rescue height?

11. A hiker whose eyes are 4 feet 10 inches above ground stands 25 feet from the base of a redwood tree. She looks up at an angle of $71°$ to see the top of the tree. What is the height of the tree? Please round to the nearest tenth of a foot.

12. From the top of a 200 foot lighthouse, the angle of depression to a ship in the ocean is $23°$. How far is the ship from the base of the lighthouse?

13. The angle of depression from the top of a 320 foot office building to the top of a 200 foot office building is $55°$. How far apart are the buildings?

14. A 96 foot tree casts a shadow that is 120 feet long. What is the angle of elevation of the sun?

15. Two observers are 600 feet apart on opposite sides of a flagpole. The angles of elevation from the observers to the top of the pole are $19°$ and $31°$. Find the height of the flagpole.