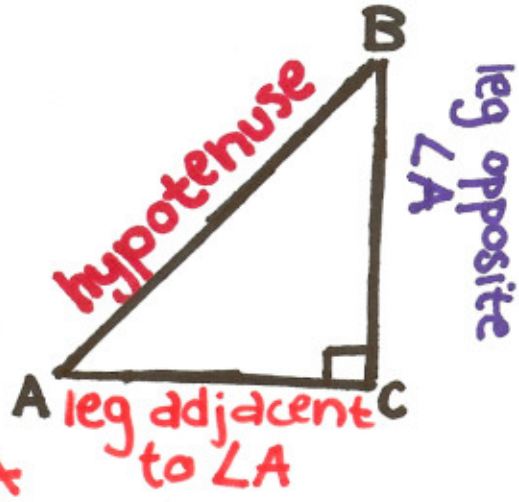
Chapter 8

In right ΔABC,

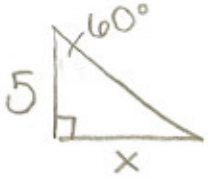
sine of $\angle A$ = sin A = $\frac{\text{leg opposite } \angle A}{\text{hypotenuse}}$

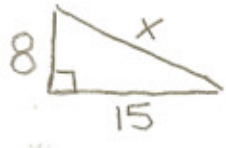
cosine of $\angle A$ = cos A = $\frac{\text{leg adjacent to } \angle A}{\text{hypotenuse}}$

tangent of $\angle A$ = tan A = $\frac{\text{leg opposite } \angle A}{\text{leg adjacent to } \angle A}$



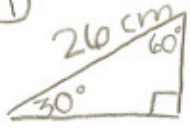
Find the value of x. If your answer is not a whole number, leave it in simplest radical form.

① 

② 

③ 

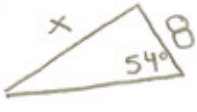
Find the missing side lengths. Give answers in radical form if necessary.

④ 

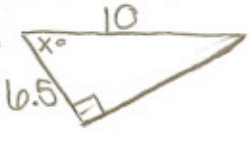
⑤ 

Find the value of x. Round to the nearest length or degree.

⑥ 

⑦ 

⑧ 

⑨ 

Solve the problem. Round to the nearest foot.

11. A couple is taking a balloon ride. After 25 mins, they measure the angle of depression from the balloon to its launch place as 116°. They are 180 ft. above the ground. Find the distance from the balloon to its launch place.

Write the sum of the two vectors as an ordered pair.

12. $\langle -1, 0 \rangle$ and $\langle 4, -6 \rangle$ 13. $\langle 2, 4 \rangle$ and $\langle 0, 9 \rangle$ 14. $\langle 4, -2 \rangle$ and $\langle -4, 2 \rangle$