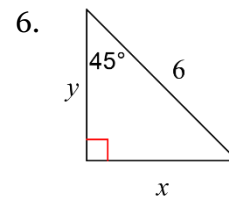
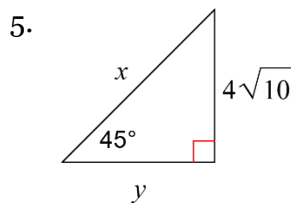
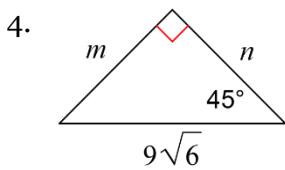
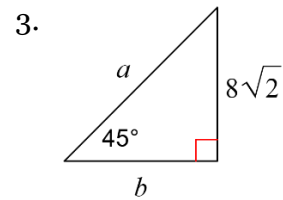
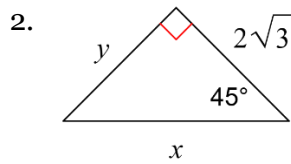
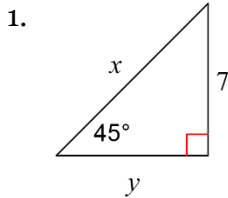


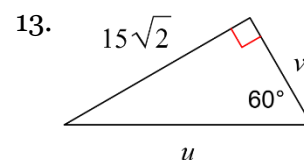
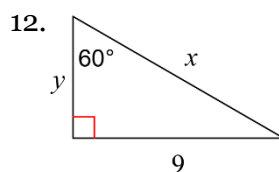
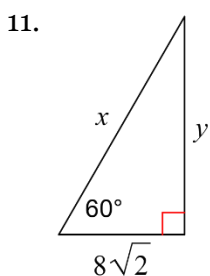
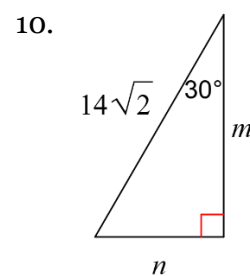
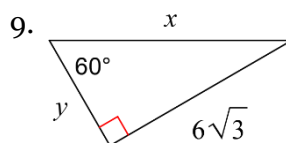
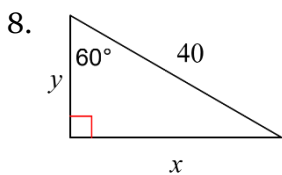
# 7.2 ~ SPECIAL RIGHT TRIANGLES

Find the missing side lengths in each  $45^\circ - 45^\circ - 90^\circ$  triangle. If necessary, express as a radical in simplest form.

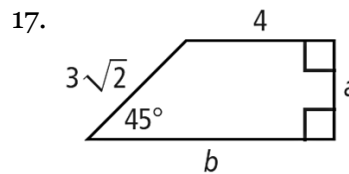
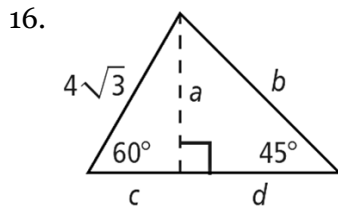
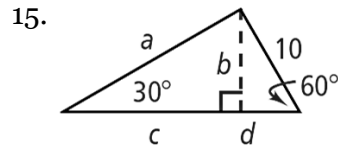
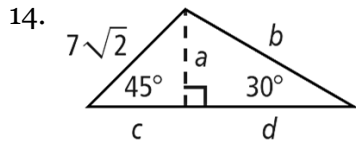


7. A damsel is in distress and is being held captive in a tower. Her knight in shining armor is on the ground below with a ladder. When the knight stands 15 feet from the base of the tower and looks up at his precious damsel, the angle of elevation to her window is  $45^\circ$ . How long does the ladder have to be?

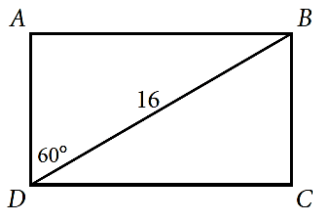
Find the missing side lengths in each  $30^\circ - 60^\circ - 90^\circ$  triangle. If necessary, express as a radical in simplest form.



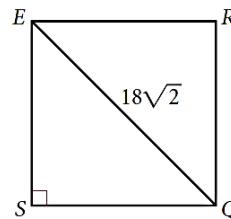
Find the value of each variable. If necessary, express as a radical in simplest form.



18. Find the area of rectangle  $ABCD$ .



19. Find the area of square  $SQRE$ .



20. After heavy winds damaged a house, workers placed a 6 meter brace against its side at a  $45^\circ$  angle. Then, at the same spot on the ground, they placed a second, longer brace to make a  $30^\circ$  angle with the side of the house.

- How long is the longer brace?
- About how much higher does the longer brace reach compared to the shorter brace?

