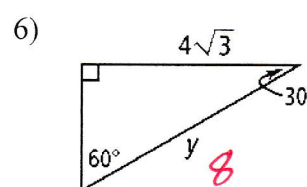
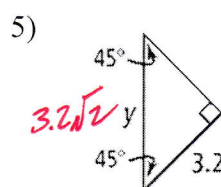
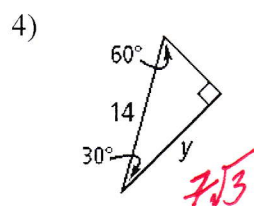
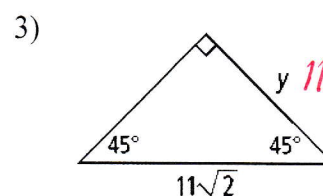
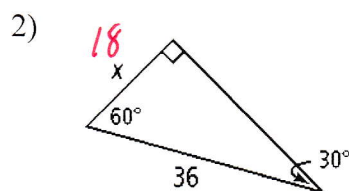
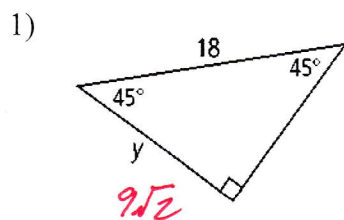


8.5 – Special Right Triangles

Find the value of each variable. If your answer is not an integer, express it in simplest radical form.



The side lengths of a triangle are given. Determine if the triangle is a 45° - 45° - 90° triangle, a 30° - 60° - 90° triangle, or neither.

7) 40, 50, 80
Neither

8) 31, $31\sqrt{2}$, 62
Neither

9) $6\sqrt{2}$, $6\sqrt{2}$, 12
 45° - 45° - 90°

10) 11, $11\sqrt{3}$, 22
 30° - 60° - 90°

11) A square has side length 95. What is the length of the diagonal of the square? Express your answer in simplest radical form.

$95\sqrt{2}$

- 12) A square has diagonal length 13 m. What is the side length of the square, to the nearest centimeter?

919 cm

- 13) A professional baseball diamond is a square. The distance from base to base is 90 ft. To the nearest foot, how far does a catcher standing at home plate throw the ball across the diagonal of the square to second base?

127 ft.

- 14) Children climb 8 ft to get to the top of a slide. The end of the slide is 1 ft above the ground and the slide rises at a 45° angle. If the slide makes a straight line from the top to the bottom, how far does a child travel down the slide? Round to the nearest foot.

10 ft.

- 15) You set up a makeshift greenhouse by leaning a square pane of glass against a building. The glass is 4.5 ft long, and it makes a 30° angle with the ground. How much horizontal distance between the building and the glass is there to grow plants? Round to the nearest inch.

47 in.

- 16) A square tablecloth has a line of embroidered flowers along the diagonal. The tablecloth is 48 in. on each side. How long is the embroidery line? Round to the nearest inch.

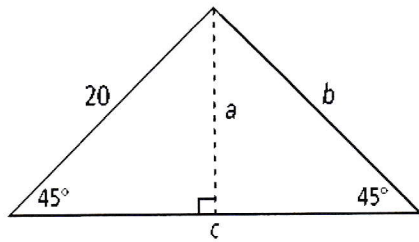
68 in.

- 17) An equilateral triangle has height 26 cm. What is the length of each side of the triangle, to the nearest centimeter?

30 cm.

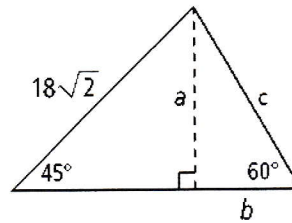
Find the value of each variable. If your answer is not an integer, express it in simplest radical form.

18)



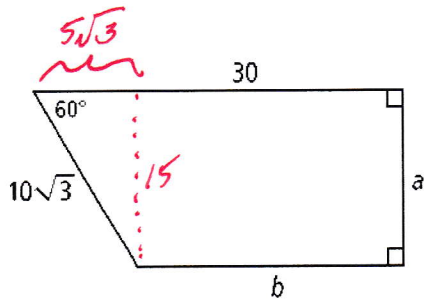
$$\begin{aligned} a &= 10\sqrt{2} \\ b &= 20 \\ c &= 20\sqrt{2} \end{aligned}$$

19)



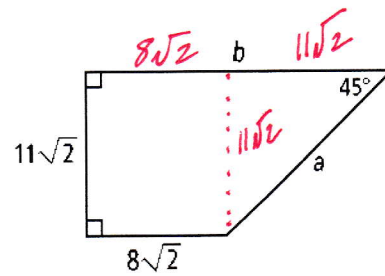
$$\begin{aligned} a &= 18 \\ b &= 6\sqrt{3} \\ c &= 12\sqrt{3} \end{aligned}$$

20)



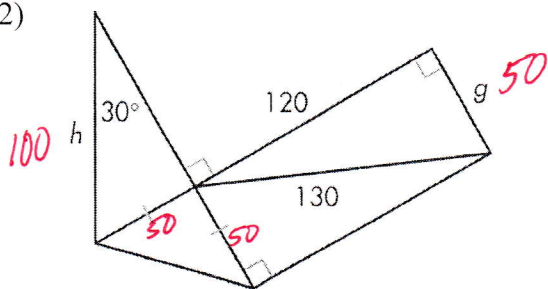
$$\begin{aligned} a &= 15 \\ b &= 30 - 5\sqrt{3} \end{aligned}$$

21)



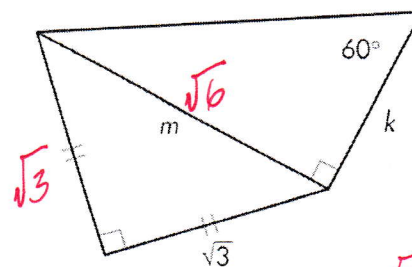
$$\begin{aligned} a &= 22 \\ b &= 19\sqrt{2} \end{aligned}$$

22)



$$\begin{aligned} g &= 50 \\ h &= 100 \end{aligned}$$

23)



$$\begin{aligned} m &= \sqrt{6} \\ k &= \sqrt{2} \end{aligned}$$