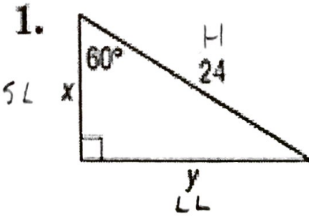
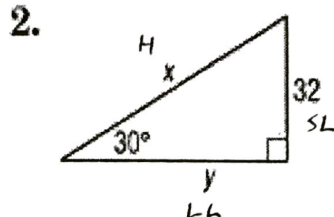


Find the exact (reduced radical form) value of x and y.



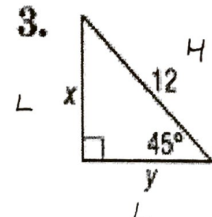
$H = 2 \cdot SL$   
 $24 = 2x$   
 $12 = x$

$LL = SL \cdot \sqrt{3}$   
 $y = 12\sqrt{3}$



$x = 2 \cdot 32$   
 $x = 64$

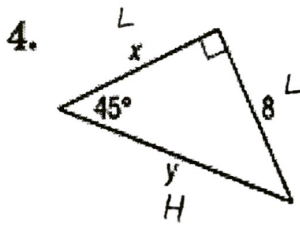
$y = 32\sqrt{3}$



$H = L \cdot \sqrt{2}$   
 $12 = x\sqrt{2}$   
 $\frac{12}{\sqrt{2}} = x$

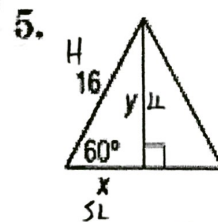
$\frac{12 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{12\sqrt{2}}{2} = 6\sqrt{2}$

$x = 6\sqrt{2}$   
 $y = 6\sqrt{2}$



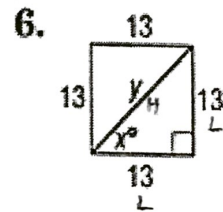
$x = 8$

$H = L \cdot \sqrt{2}$   
 $y = 8\sqrt{2}$



$16 = 2x$   
 $8 = x$

$y = 8\sqrt{3}$



$x = 4.5$

$y = 13\sqrt{2}$

Solve each problem using the square to the right.

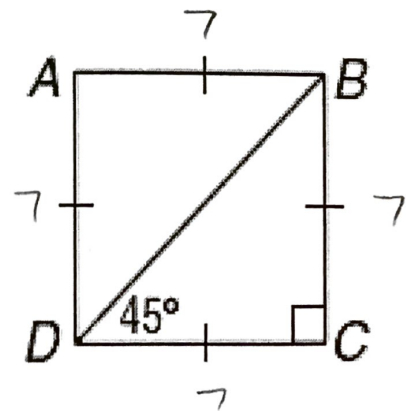
7. The perimeter of ABCD is 28 inches. Find BC.

$\frac{28}{4} = 7$

$BC = 7 \text{ in.}$

8. The perimeter of ABCD is 28 inches. Find BD.

$BD = 7\sqrt{2} \text{ in}$

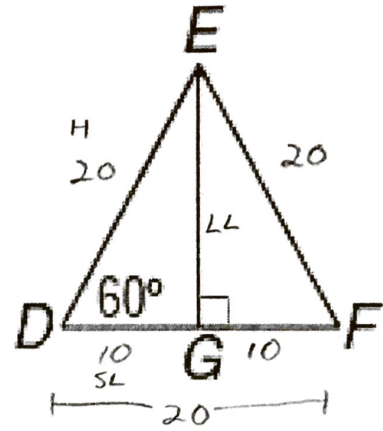


Solve each problem using the equilateral to the right.

9. The perimeter of EFD is 60 meters. Find EG.

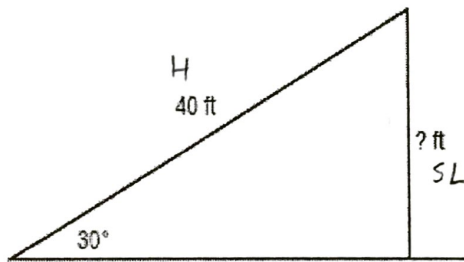
$$\frac{60}{3} = 20$$

$$EG = 10\sqrt{3}$$



Solve each problem.

10. A 40-foot-long escalator rises from the first floor to the second floor of a shopping mall. The escalator makes a  $30^\circ$  angle with the horizontal. How high above the first floor is the second floor?



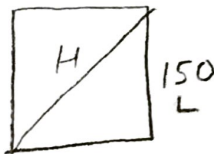
$$H = 2 \cdot SL$$

$$40 = 2x$$

$$20 = x$$

$$20 \text{ ft}$$

11. A square piece of paper 150 mm on a side is folded along a diagonal. The result is a 45-45-90 triangle. What is the length of the hypotenuse of this triangle?

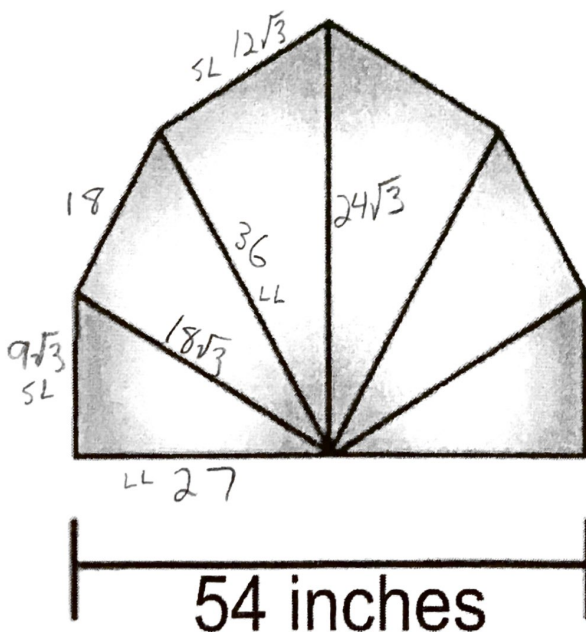


$$H = L \cdot \sqrt{2}$$

$$H = 150\sqrt{2}$$

$$150\sqrt{2} \text{ mm}$$

12. A large stained glass window is constructed from six  $30^\circ$ - $60^\circ$ - $90^\circ$  triangles as shown in the figure below. What is the height of the window?



$$LL = SL \cdot \sqrt{3}$$

$$27 = SL \cdot \sqrt{3}$$

$$\frac{27}{\sqrt{3}} = SL$$

$$\frac{27}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{27\sqrt{3}}{3} = 9\sqrt{3}$$

$$36 = SL \cdot \sqrt{3}$$

$$\frac{36}{\sqrt{3}} = SL$$

$$\frac{36}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{36\sqrt{3}}{3} = 12\sqrt{3}$$

$$\text{height} = 24\sqrt{3} \text{ in}$$