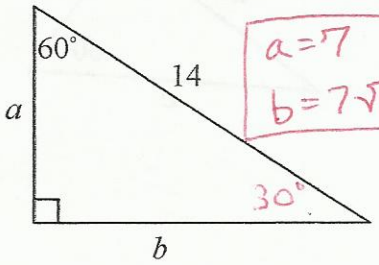
Special Right Triangles **Name:** KEY

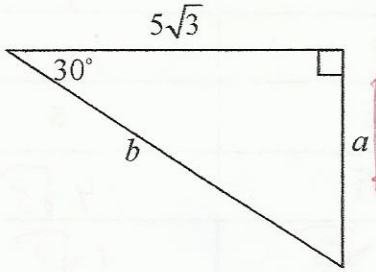
Find the value of a and b for each of the following special right triangles.

1.



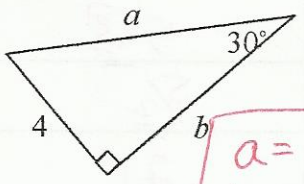
$a = 7$
$b = 7\sqrt{3}$

2.



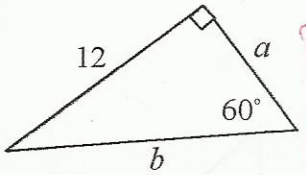
$a = 5$
$b = 10$

3.



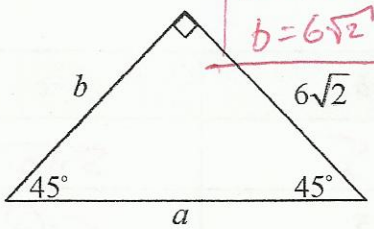
$a = 8$
$b = 4\sqrt{3}$

4.



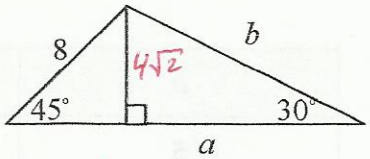
$a = 4\sqrt{3}$
$b = 8\sqrt{3}$

5.



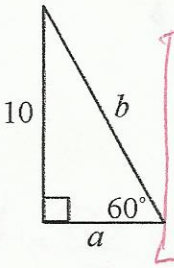
$a = 12$
$b = 6\sqrt{2}$

6.



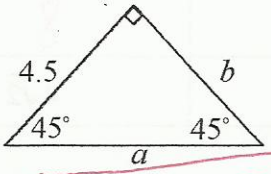
$a = 4\sqrt{6}$
$b = 8\sqrt{2}$

7.



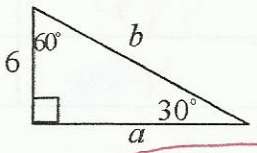
$a = \frac{10\sqrt{3}}{3}$
$b = \frac{20\sqrt{3}}{3}$

8.



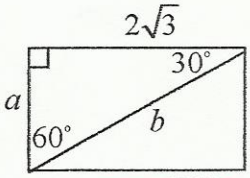
$a = 4.5\sqrt{2}$ or $\frac{9\sqrt{2}}{2}$
$b = 4.5$ or $9/2$

9.



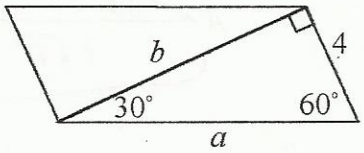
$a = 6\sqrt{3}$
$b = 12$

10.



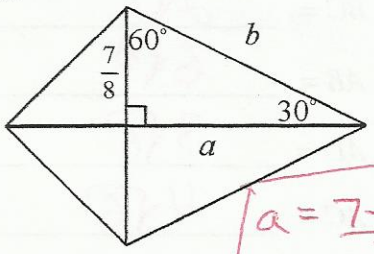
$a = 2$
$b = 4$

11.



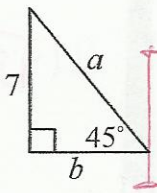
$a = 8$
$b = 4\sqrt{3}$

12.



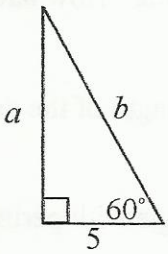
$a = \frac{7\sqrt{3}}{8}$
$b = \frac{7}{4}$

13.



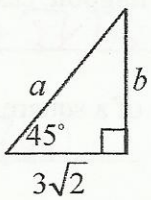
$a = 7\sqrt{2}$
$b = 7$

14.



$a = 5\sqrt{3}$
$b = 10$

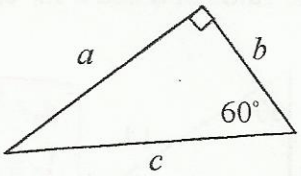
15.



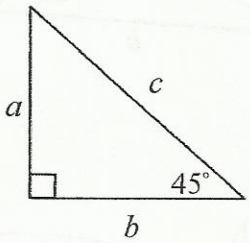
$a = 6$
$b = 3\sqrt{2}$

Find the missing lengths to complete the table.

	a	*b*	*c*
1.	5	$\frac{5\sqrt{3}}{3}$	$\frac{10\sqrt{3}}{3}$
2.	$5\sqrt{3}$	5	10
3.	$\frac{5\sqrt{3}}{2}$	$5/2$	5
4.	21	$7\sqrt{3}$	$14\sqrt{3}$
5.	6	$2\sqrt{3}$	$4\sqrt{3}$



	a	*b*	*c*
6.	5	5	$5\sqrt{2}$
7.	5	5	$5\sqrt{2}$
8.	$\frac{5\sqrt{2}}{2}$	$\frac{5\sqrt{2}}{2}$	5
9.	$4\sqrt{2}$	$4\sqrt{2}$	8
10.	4	4	$4\sqrt{2}$



$DC = \frac{3\sqrt{2}}{\sqrt{3}} = \frac{3\sqrt{6}}{3}$

11. $m\angle ADB =$ 90°

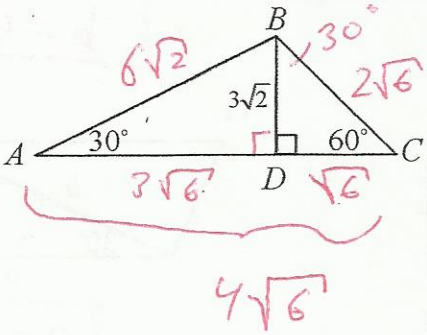
12. $DC =$ $\sqrt{6}$

13. $BC =$ $2\sqrt{6}$

14. $AB =$ $6\sqrt{2}$

15. $AD =$ $3\sqrt{6}$

16. $AC =$ $4\sqrt{6}$



17. At a time of day when the sun can be sighted at an angle of 60° above the horizon, a flagpole casts a shadow that is 21 ft long. How tall is the flagpole? $21\sqrt{3}$ ft or 36.4 ft.

18. The perimeter of a square is 72 units. What is the length of the diagonal of the square? $18\sqrt{2}$

19. Find the length of the altitude of an equilateral triangle with perimeter of 48 inches. $8\sqrt{3}$