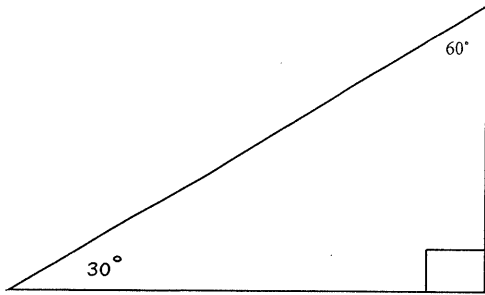


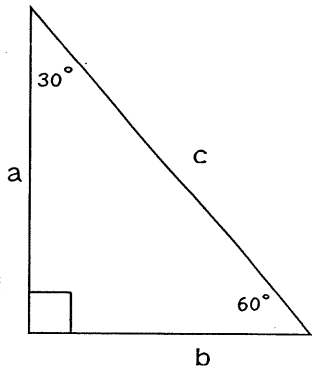
HOW DO THE SIDES OF A 30-60-90 RIGHT TRIANGLE RELATE TO EACH OTHER?



Notes:

- 1) To convert short leg → hypotenuse, **multiply** short leg by 2
- 2) To convert hypotenuse → short leg, **divide** hypotenuse by 2
- 3) To convert short leg → long leg, **multiply** short leg by $\sqrt{3}$
- 4) To convert long leg → short leg, **divide** long leg by $\sqrt{3}$

1.) Complete the table for the special right triangle below. Express irrational values in simplest radical form.



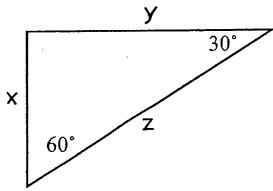
a	b	c
	5	
	7	
		10
$2\sqrt{3}$		
$12\sqrt{3}$		
4		
	$4\sqrt{3}$	
$2\sqrt{6}$		
7		

1. Find the missing sides for the $30^\circ-60^\circ-90^\circ$ triangle below.

a. $x = 9$

b. $y = 5\sqrt{3}$

c. $z = 32\sqrt{2}$



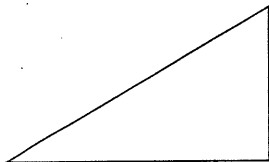
d. $x = \frac{19}{2}$

e. $y = \frac{\sqrt{3}}{2}$

f. $z = 10$

2. A road sign is shaped like an equilateral triangle. Use your knowledge of $30^\circ-60^\circ-90^\circ$ triangles to find the approximately area of the road sign. The length of the base of the equilateral triangle is 36 inches.

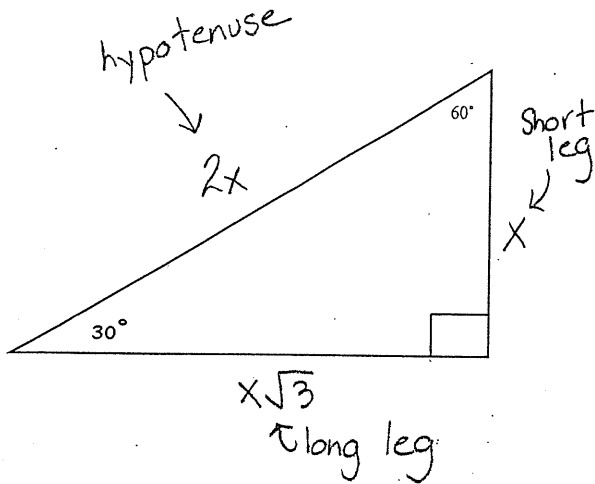
3. Find the area of the $30^\circ-60^\circ-90^\circ$ triangle with an hypotenuse of 12 feet. Round decimal answers to the nearest tenth



5. The bases on a softball field form a square with a side length of 60 feet. You throw a softball from first base to third base. How far do you throw the softball?

Key

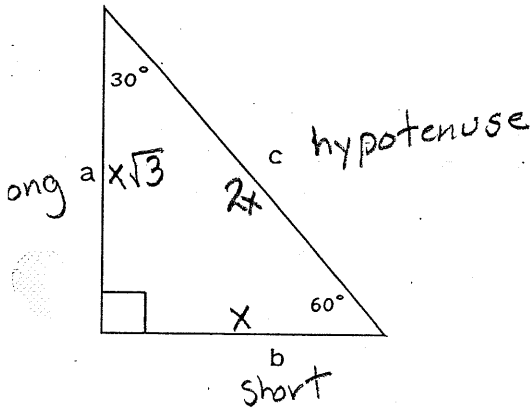
HOW DO THE SIDES OF A 30-60-90 RIGHT TRIANGLE RELATE TO EACH OTHER?



Notes:

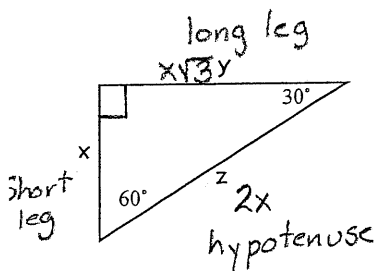
- 1) To convert short leg → hypotenuse, multiply short leg by 2
- 2) To convert hypotenuse → short leg, divide hypotenuse by 2
- 3) To convert short leg → long leg, multiply short leg by $\sqrt{3}$
- 4) To convert long leg → short leg, divide long leg by $\sqrt{3}$

1.) Complete the table for the special right triangle below. Express irrational values in simplest radical form.



a	b	c
$5\sqrt{3}$	5	10
$7\sqrt{3}$	7	14
$5\sqrt{3}$	5	10
$2\sqrt{3}$	2	4
$12\sqrt{3}$	12	24
4	$\frac{4\sqrt{3}}{3}$	$\frac{8\sqrt{3}}{3}$
$4\sqrt{6}$	$4\sqrt{3}$	$8\sqrt{3}$
$2\sqrt{6}$	$2\sqrt{3}$	$4\sqrt{3}$
7		

1. Find the missing sides for the $30^\circ-60^\circ-90^\circ$ triangle below.



a. $x = 9$

$y = 9\sqrt{3}$
 $z = 18$

b. $y = 5\sqrt{3}$

$x = 5$
 $z = 10$

c. $z = 32\sqrt{2}$

$x = 16\sqrt{2}$
 $y = 16\sqrt{6}$

d. $x = \frac{19}{2}$

$y = \frac{19}{2}\sqrt{3}$
 $z = 19$

e. $y = \frac{\sqrt{3}}{2}$

$x = \frac{1}{2}$
 $z = 1$

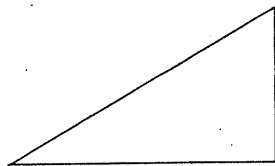
f. $z = 10$

$x = 5$

$y = 5\sqrt{3}$

2. A road sign is shaped like an equilateral triangle. Use your knowledge of $30^\circ-60^\circ-90^\circ$ triangles to find the approximately area of the road sign. The length of the base of the equilateral triangle is 36 inches.

3. Find the area of the $30^\circ-60^\circ-90^\circ$ triangle with an hypotenuse of 12 feet. Round decimal answers to the nearest tenth



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