Special Right Triangles
Angle Based
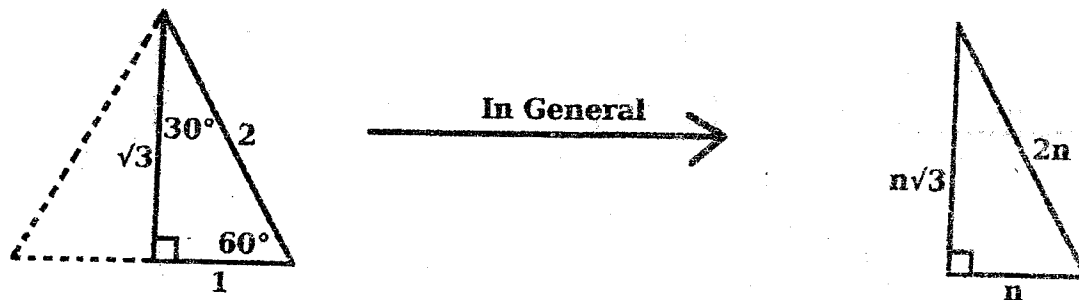
45° - 45° - 90°
Constructed by slicing a square down its diagonal.

In General →
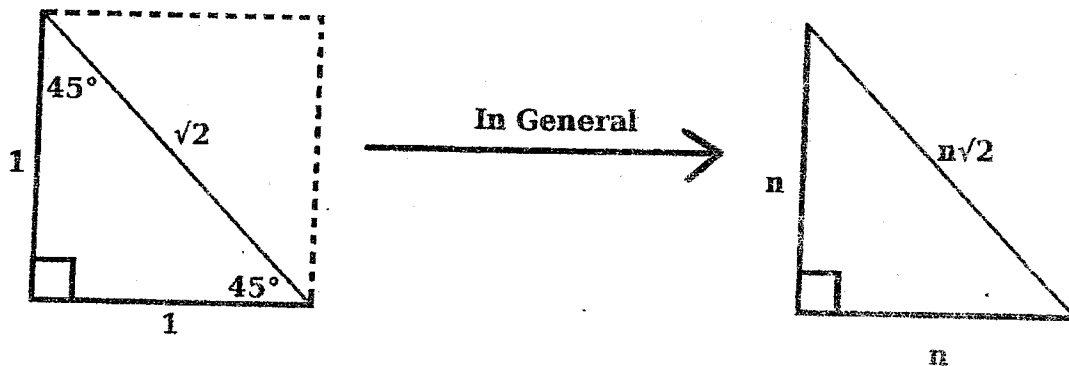
30° - 60° - 90°
Constructed by slicing an equilateral triangle down its altitude.
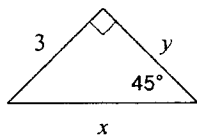

In General →

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W6. Special Right Triangles

Find the missing side lengths. Leave your answers as radicals in simplest form.

1)

3
y
45°
x

2)

x
7
45°
y

3)

x
y
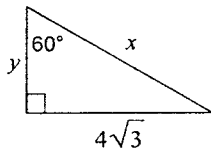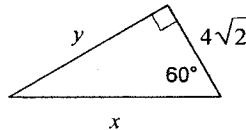45°
2

4)

x
$2\sqrt{2}$
45°
y

5)

60°
x
y
$4\sqrt{3}$

6)

y
$4\sqrt{2}$
60°
x

7)

v
5
45°
u

8)

4
a
60°
b

9)

m
2
60°
n

10)

u
v
45°
10

11)

n
$\sqrt{3}$
60°
m
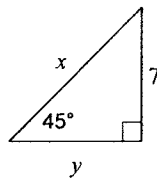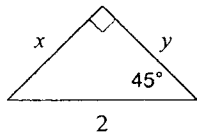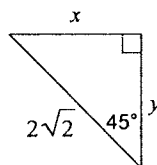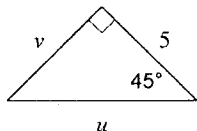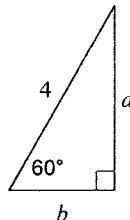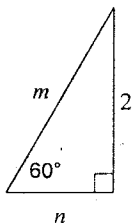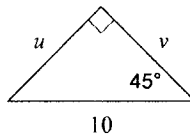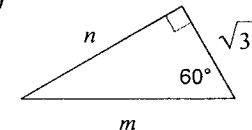
Math 3 – Special Right △ Review

Find the value of x. Write your answer in simplest radical form.
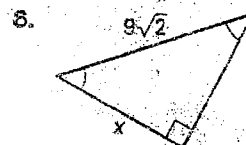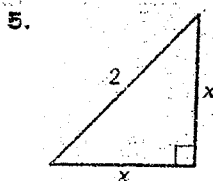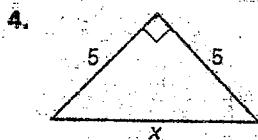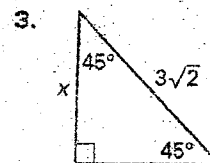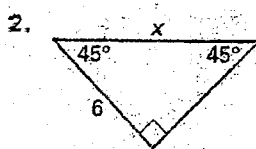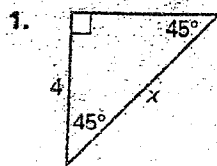
1.

45°
4
x
45°

2.

x
45°   45°
6

3.

45°
x $3\sqrt{2}$
45°

4.

5   5
x

5.

2
x
x

6.

$9\sqrt{2}$
x

Find the value of each variable. Write your answers in simplest radical form.

7.

y
30°
2
x
60°

8.

y
30°
x
6
60°

9.

$\sqrt{3}$
30°
y
x
60°

10.

x
30°
10
y

11.

y   7
30°
x

12.

$6\sqrt{3}$
x
30°
y
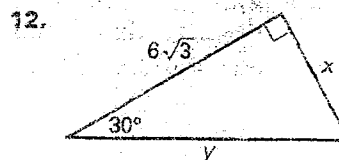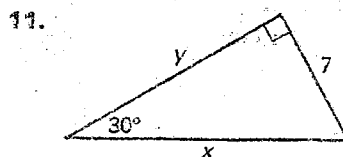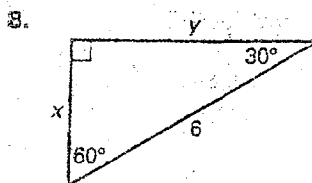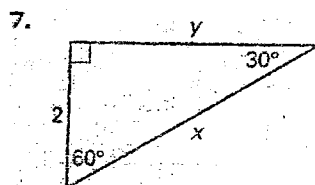
Copy and complete the table.

13.

y
45°   45°
x   x

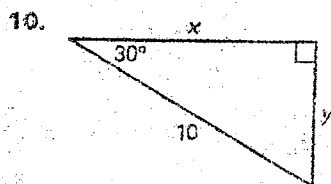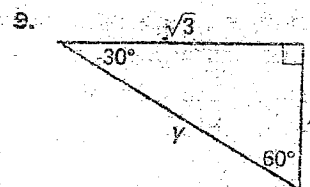|	2		4		7
		$\sqrt{2}$		$3\sqrt{2}$	

14.

b   a
30°   60°
c
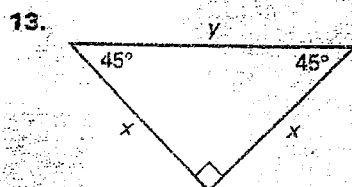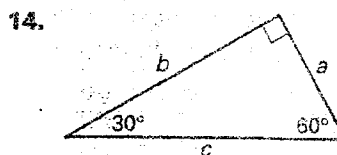
a	5			6	
b		$2\sqrt{3}$			
c			8		22

Name _____ Date _____

Find the value of each variable. Write your answers in simplest radical form.

15.

10, x, y

16.

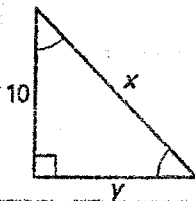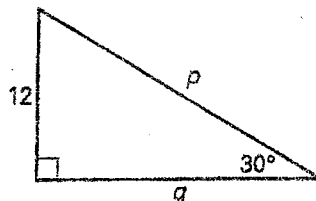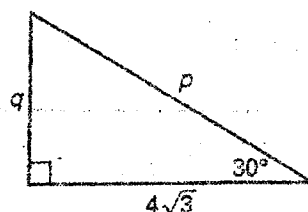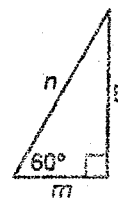12, p, q, 30°

17.

16, n, m, 60°

18.

x, 15, y, 45°

19.

q, p, 30°, $4\sqrt{3}$

20.
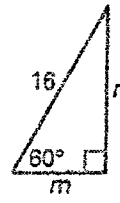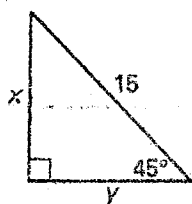
n, 5, m, 60°

21. **Multiple Choice** In the diagrams to the right, which side length is the longest?

   A. *a*   **B.** *b*

   C. *c*   **D.** *d*
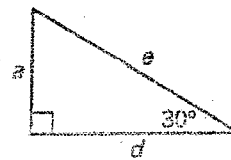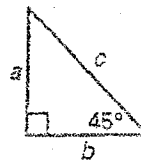
22. **Bleachers** A 24 foot long bleacher stand has a base angle of 30°. How high above the ground is the last row of seating?
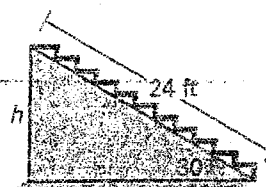
23. **Baseball** The baselines of a baseball field form a square. The distance from home plate to first base is 90 feet. Use the diagram at the right. Round decimal answers to the nearest inch.

  a. What is the distance from home plate to second base?

  b. What is the distance from third base to first base?

  c. The pitcher's mound is 60 feet 6 inches from home plate. Is it the midpoint of the diagonal from home plate to second base? If not, what is the midpoint?