Geometry   5.8   Name_____
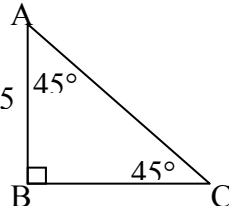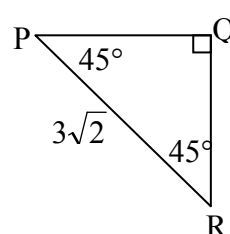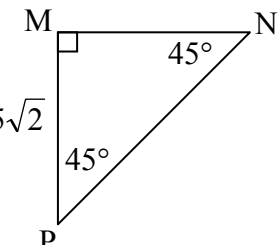**Worksheet: Special Right Triangles 45-45-90**

Find the lengths of the indicated sides. SHOW ALL WORK.

1.

BC = _____

AC = _____
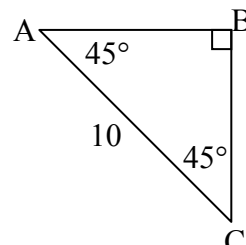
Leg(x)	Leg(x)	Hypotenuse $(x\sqrt{2})$

2.

PQ = _____

QR = _____
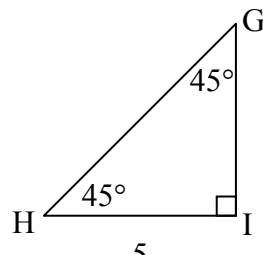
Leg(x)	Leg(x)	Hypotenuse $(x\sqrt{2})$

3.

MN = _____

NP = _____
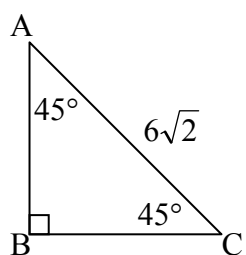
Leg(x)	Leg(x)	Hypotenuse $(x\sqrt{2})$

4.

AB = _____

BC = _____

Leg(x)	Leg(x)	Hypotenuse $(x\sqrt{2})$

5.

GI = _____

HI = _____

Leg(x)	Leg(x)	Hypotenuse $(x\sqrt{2})$

6.

AB = _____

BC = _____

Leg(x)	Leg(x)	Hypotenuse $(x\sqrt{2})$

7. Matt wants to design the first section of a roller coaster track. He wants the ramp section to rise at 45° with the horizontal and connect at the top of a segment 100 feet high. Find x, the length of the ramp Matt needs to complete his section of the coaster track?

Leg(x)	Leg (x)	Hypotenuse $\left(x\sqrt{2}\right)$

100 ft

45°
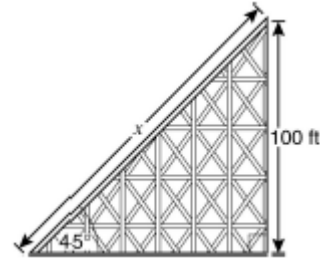
8. A square has a perimeter of 32 inches. How long is the diagonal?

Leg(x)	Leg (x)	Hypotenuse $\left(x\sqrt{2}\right)$

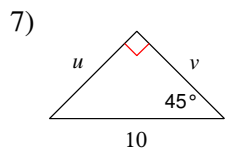9. A square has side lengths of 23 inches. How long is each diagonal?

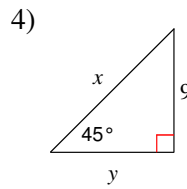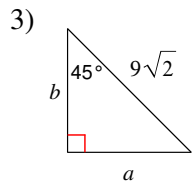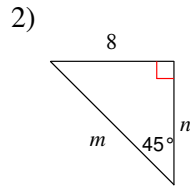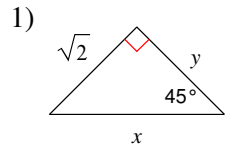| Leg(x)	Leg (x)	Hypotenuse $\left(x\sqrt{2}\right)$

10. Sam's square bedroom has a diagonal of $9\sqrt{2}$ feet. What is the length of each side?

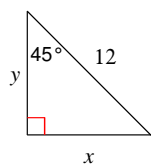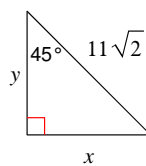| Leg(x)	Leg (x)	Hypotenuse $\left(x\sqrt{2}\right)$

Name_____

45-45-90 triangles

Date_____ Period_____

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

1)

$\sqrt{2}$ y $45°$ x

2)

8   m $45°$ n
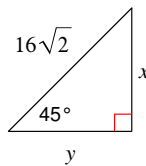
3)

$45°$ $9\sqrt{2}$ b a

4)

x 9 $45°$ y

5)

x y $45°$ 2

6)

a $5\sqrt{2}$ $45°$ b

7)

u v $45°$ 10

8)

u $\dfrac{9\sqrt{2}}{2}$ $45°$ v

9)

$45°$ $3\sqrt{5}$ y x

10)

y $45°$ 5 x

11)

45°   12
y

x

12)

45° $11\sqrt{2}$
y

x

13)

y

x   45°   19

14)

16   y
        45°
        x

15)

x   y
        45°
   $20\sqrt{2}$

16)

$16\sqrt{2}$ x
   45°
        y

17)

b   12
        45°
        a

18)

v   15
        45°
        u

19)

$\dfrac{5\sqrt{3}}{3}$
45°
y   x

20)

u
12\sqrt{2}   45°   v
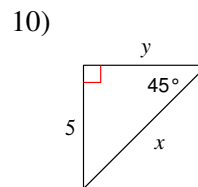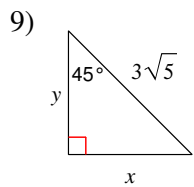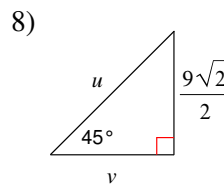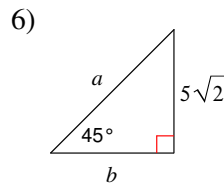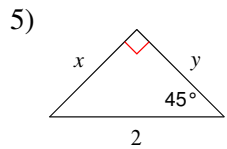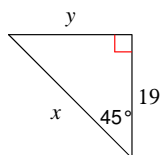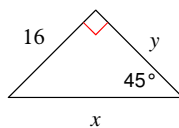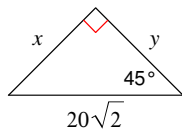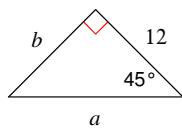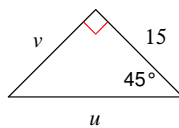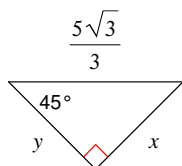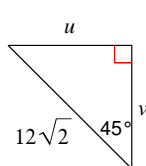
Geometry   Name_____
WS 4.11.2 Special Right Triangles (45-45-90)   Date_____ Period_____

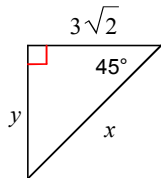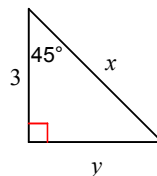**Find the missing side lengths. Leave your answers as radicals in simplest form.**

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)