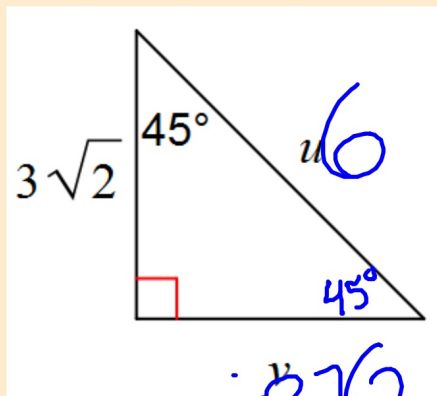


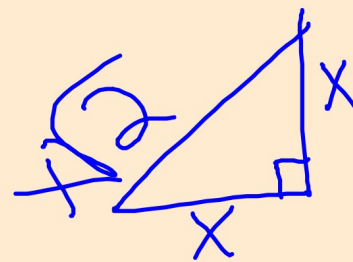
## Reflect for the week and turn in!

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
<b>Monday</b> Date: <u>12/11</u> Topic: <u>Unit 3 test Friday - no HW!</u>	0   1   2	
<b>Tuesday</b> Date: <u>12/12</u> Topic: <u>5AB Multiplying Radicals</u>	0   1   2	
<b>Wednesday</b> Date: <u>12/13</u> Topic: <u>5B Multiplying Radicals</u>	0   1   2	
<b>Thursday</b> Date: <u>12/14</u> Topic: <u>5C Simplifying Radicals</u>	0   1   2	
<b>Friday</b> Date: <u>12/15</u> Topic: <u>45-45-90 triangle</u>	0   1   2	

Warm-up: Solve for  $u$  and  $v$ . Leave your answer in exact radical form.



$$3\sqrt{2}$$



$$\begin{aligned} u &= 3\sqrt{2}(\sqrt{2}) \\ &= 3\sqrt{4} \\ &= 3 \cdot 2 = 6 \end{aligned}$$

## Class Plan:

1. Warm-up

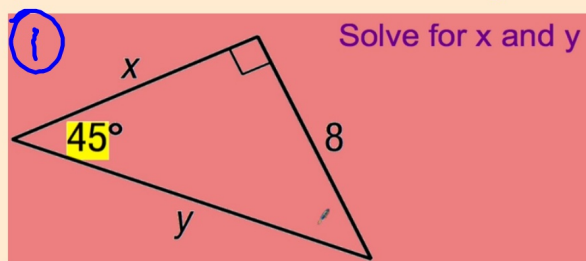
2. Video: Review 45-45-90  
Triangle shortcut.

3. Practice

Video: Review 45-45-90 Triangle shortcut.

1) Draw triangles in your notebook.

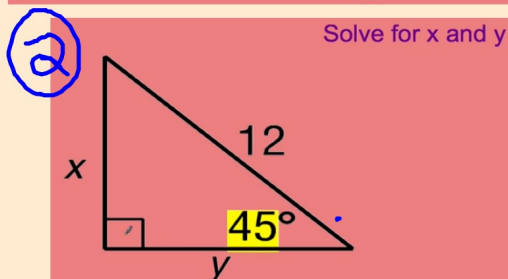
2) Solve. Beat the presenter!



Are we given the leg or hypotenuse?

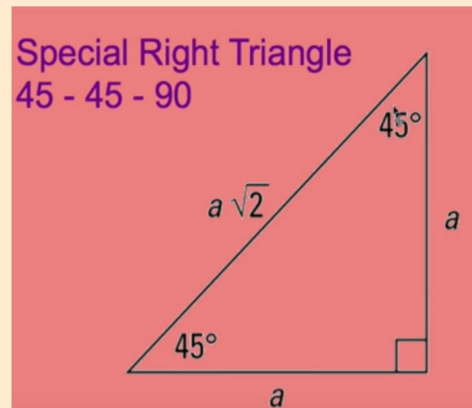
How do we solve from the leg?

How do we solve from the hypotenuse?

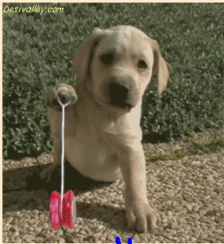


[https://www.youtube.com/watch?v=XYwFve\\_g6eg](https://www.youtube.com/watch?v=XYwFve_g6eg)

Video: Review 45-45-90 Triangle shortcut.



[https://www.youtube.com/watch?v=XYwFve\\_g6eg](https://www.youtube.com/watch?v=XYwFve_g6eg)



# 3 IN A ROW!

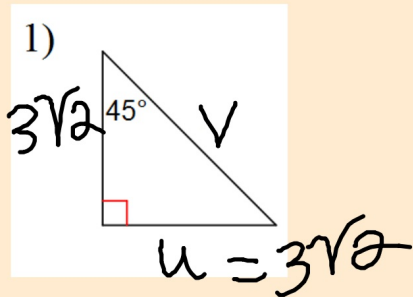
Create a unique game board (draw a 3x3 grid in your notebook)

Randomly put problem #s on your board (1, 2, 3, 4, 5, 6, 7, 9, 10)

Challenge  
8, 11, 12

<del>1</del>	9	<del>3</del>
7	<del>2</del>	4
<del>5</del>	6	<del>10</del>

Solve for the missing side lengths.  
Use simplest radical form.

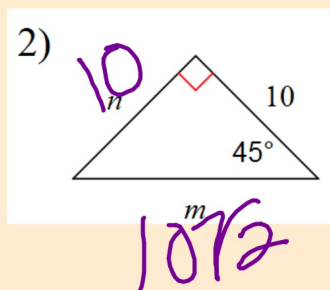


$$V = 3\sqrt{2}\sqrt{2}$$

$$V = 3 \cdot 2$$

$$\boxed{V = 6}$$

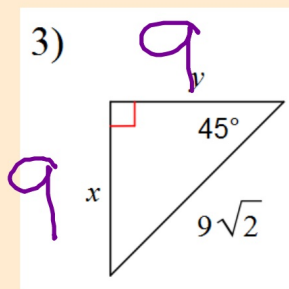
Solve for the missing side lengths.  
Use simplest radical form.



$$10^2 + 10^2 = 200$$
$$\sqrt{200} = \sqrt{100 \cdot 2}$$
$$= 10\sqrt{2}$$



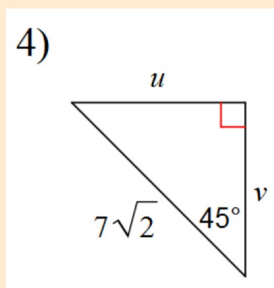
Solve for the missing side lengths.  
Use simplest radical form.



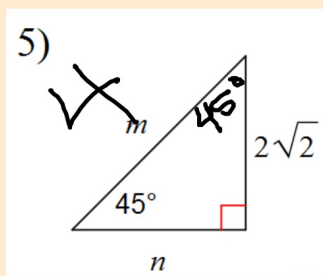
$$\frac{9\sqrt{2}}{\sqrt{2}} = \frac{x\sqrt{2}}{\sqrt{2}}$$

A right-angled triangle with a 45-degree angle. The horizontal leg is labeled  $x$ , the vertical leg is labeled  $45$ , and the hypotenuse is labeled  $x\sqrt{2}$ . A red  $x$  is written above the horizontal leg, and a red  $45$  is written next to the vertical leg.

Solve for the missing side lengths.  
Use simplest radical form.



Solve for the missing side lengths.  
Use simplest radical form.

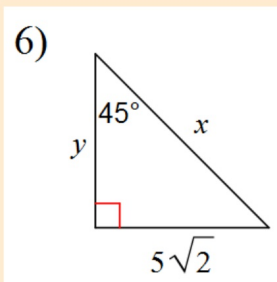


$$m = 2\sqrt{2}(\sqrt{2})$$

$$n = 2\sqrt{2}$$

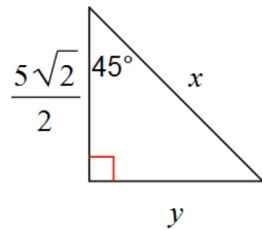


Solve for the missing side lengths.  
Use simplest radical form.

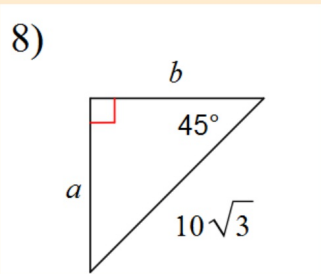


Solve for the missing side lengths.  
Use simplest radical form.

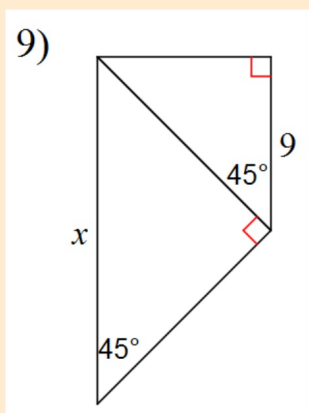
7)



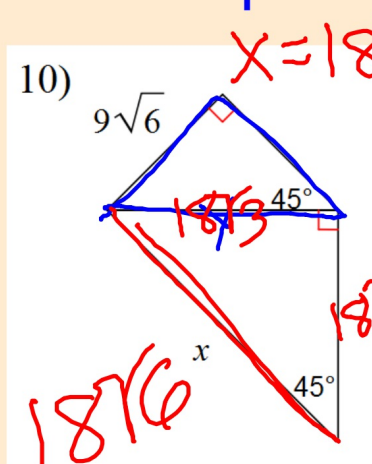
Solve for the missing side lengths.  
Use simplest radical form.



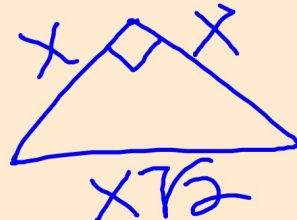
Solve for the missing side lengths.  
Use simplest radical form.



Solve for the missing side lengths.  
Use simplest radical form.



$$x = 18\sqrt{3} \cdot \sqrt{2}$$

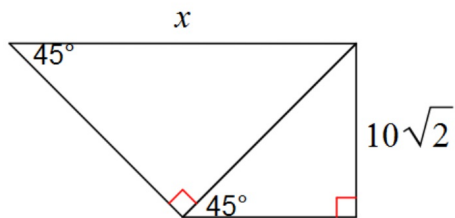


$$\begin{aligned}
 18\sqrt{3} \cdot \sqrt{2} &= 9\sqrt{6} \cdot \sqrt{2} = 9\sqrt{12} \\
 &= 9\sqrt{4 \cdot 3} \\
 &= 9\sqrt{4} \sqrt{3} \\
 \boxed{18\sqrt{3}} &= 9 \cdot 2\sqrt{3}
 \end{aligned}$$



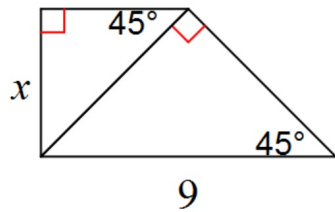
Solve for the missing side lengths.  
Use simplest radical form.

11)



Solve for the missing side lengths.  
Use simplest radical form.

12)



## Solutions:

### Answers to 45 - 45 - 90 (Isosceles Right Triangle)

1)  $u = 6, v = 3\sqrt{2}$

2)  $m = 10\sqrt{2}, n = 10$

3)  $x = 9, y = 9$

4)  $u = 7, v = 7$

5)  $m = 4, n = 2\sqrt{2}$

6)  $x = 10, y = 5\sqrt{2}$

7)  $x = 5, y = \frac{5\sqrt{2}}{2}$

8)  $a = 5\sqrt{6}, b = 5\sqrt{6}$

9) 18

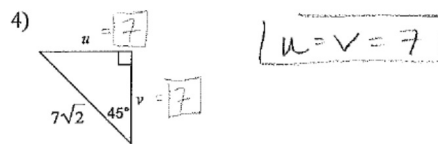
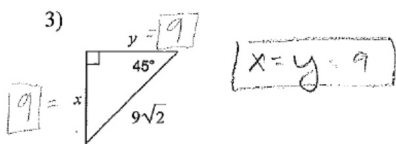
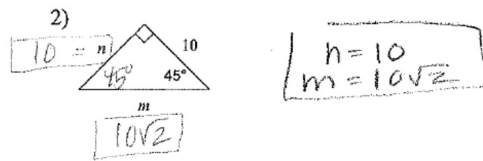
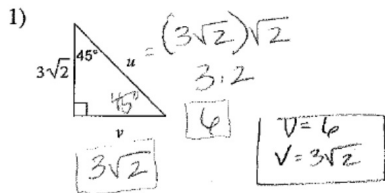
10)  $18\sqrt{6}$

11)  $20\sqrt{2}$

12)  $\frac{9}{2}$

# Solutions:

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



## Solutions:

5)

$\frac{(2\sqrt{2})\sqrt{2}}{2 \cdot 2} = \frac{4}{4}$   
 $m = 4$   
 $n = 2\sqrt{2}$

6)

$5\sqrt{2} = y$   
 $x = (5\sqrt{2})\sqrt{2} = 5 \cdot 2 = 10$   
 $y = 5\sqrt{2}$   
 $x = 10$

7)

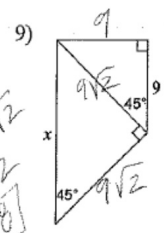
$\frac{5\sqrt{2}}{2} \cdot \sqrt{2} = \frac{5 \cdot 2}{2} = 5$   
 $x = 5$   
 $y = \frac{5\sqrt{2}}{2}$

8)

$a = b = 5\sqrt{6}$   
 $\frac{10\sqrt{3}}{\sqrt{2}} = \frac{a\sqrt{2}}{\sqrt{2}}$   
 $a = \frac{10\sqrt{3} \cdot \sqrt{2}}{\sqrt{2}} = \frac{10\sqrt{6}}{2} = 5\sqrt{6}$

## Solutions:

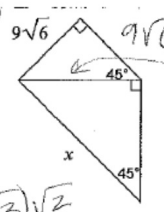
9)



$(9\sqrt{2})\sqrt{2}$   
 $9 \cdot 2$   
 $18$

$x = 18$

10)

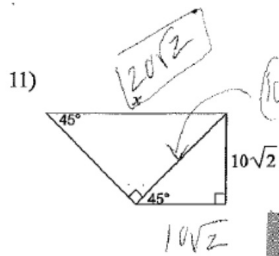


$(9\sqrt{6})\sqrt{2}$   
 $9\sqrt{12}$   
 $9\sqrt{4 \cdot 3}$   
 $9 \cdot 2 \cdot \sqrt{3}$   
 $18\sqrt{3}$

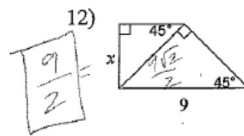
$(18\sqrt{3})\sqrt{2}$   
 $18\sqrt{6}$

$x = 18\sqrt{6}$

## Solutions:



$$x = 20\sqrt{2}$$



$$9 = \frac{l\sqrt{2}}{\sqrt{2}}$$

$$l = \frac{9 \cdot \sqrt{2}}{\sqrt{2} \sqrt{2}}$$

$$l = \frac{9\sqrt{2}}{2}$$

$$x = \frac{9}{2}$$