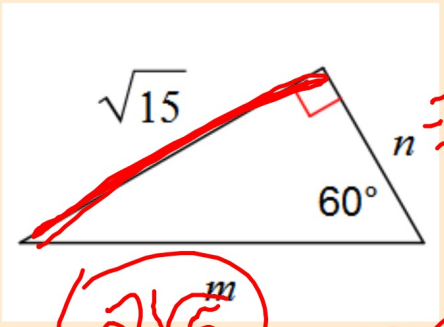
Welcome Back MYP Math 9!

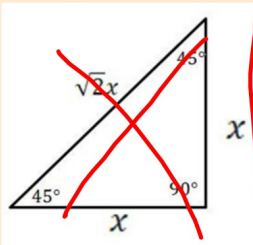
	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: 12/18 Topic: 45-45-90 Triangle Review	0 1 2	
Tuesday Date: 12/19 Topic: 30-60-90 Triangle	0 1 2	
Wednesday Date: 12/20 Topic: 30-60-90 Triangle Review	0 1 2	
Thursday Date: _____ Topic: _____	0 1 2	
Friday Date: _____ Topic: _____	0 1 2	

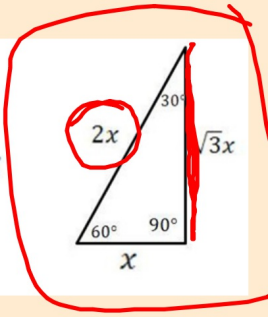
Warm-up: Find ***m*** and ***n***.



$n = \sqrt{15}$

$2\sqrt{5}$

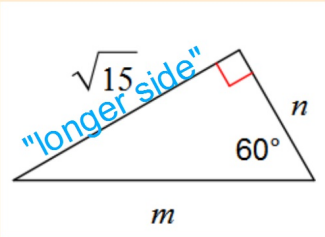


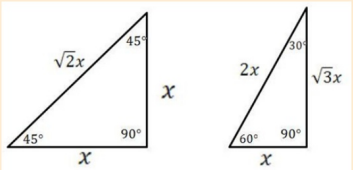


$$\frac{x\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{15}}{\sqrt{3}} = \sqrt{\frac{15}{3}}$$

$$x = \sqrt{5}$$

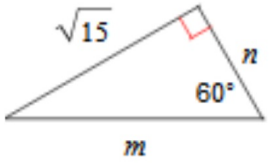
Warm-up: Find ***m*** and ***n***.





$$\frac{\sqrt{15}}{\sqrt{3}} = \sqrt{\frac{15}{3}} = \sqrt{5}$$

Solution

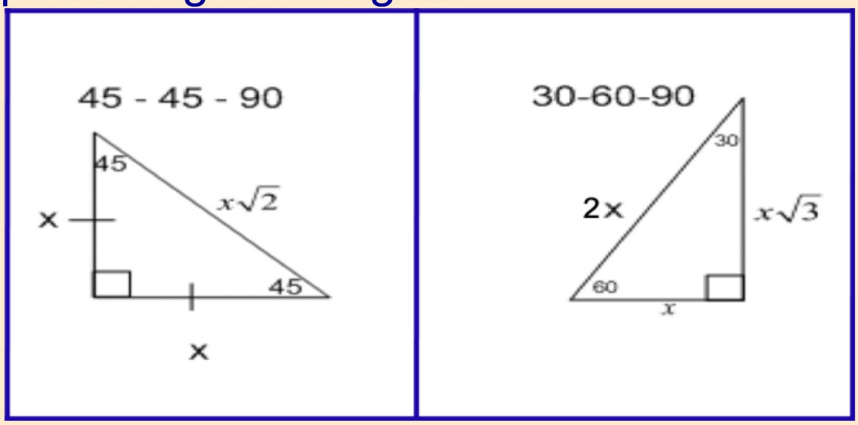


$m = 2\sqrt{5},\ n = \sqrt{5}$

Unit 4: Radicals & Special Right Triangles

DO: Review Worksheet

1. Simplifying Radicals (5A/B/C)
2. Special Right Triangles



Done? Review investigations, handouts, notes. Study for Quiz 4.1 tomorrow!

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

1) $\sqrt{5} \cdot \sqrt{15}$

$\sqrt{75} = \sqrt{25 \cdot 3}$

$5\sqrt{3}$

2) $\sqrt{3} \cdot \sqrt{21}$

$\sqrt{63}$

$\sqrt{9 \cdot 7}$

$3\sqrt{7}$

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

3) $\sqrt{10}\left(3\sqrt{6}\right)$

$3\sqrt{60}$

$3\sqrt{4}\sqrt{15}$

$3 \cdot 2\sqrt{15}$

$6\sqrt{15}$

4) $\left(2\sqrt{3}\right)^2$

$2\sqrt{3} \cdot 2\sqrt{3}$

$4 \cdot 3$

12

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

5) $\dfrac{\sqrt{48}}{\sqrt{3}}$ $= \sqrt{16}\sqrt{3}$

$\sqrt{\frac{48}{3}}$

$\sqrt{16}$

4

6) $\sqrt{\dfrac{81}{121}}$

$\dfrac{\sqrt{81}}{\sqrt{121}} = \dfrac{9}{11}$

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

5) $\dfrac{\sqrt{48}}{\sqrt{3}} = 4$

6) $\sqrt{\dfrac{81}{121}}$

$\sqrt{\frac{48}{3}} = \sqrt{16}$ $\quad \frac{\sqrt{81}}{\sqrt{121}}$ $\quad \frac{9}{11}$

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

7) $\sqrt{20}$

$\sqrt{4 \cdot 5}$

$\sqrt{4}\sqrt{5}$

$2\sqrt{5}$

8) $\sqrt{180}$

$\sqrt{9 \cdot 20}$

$\sqrt{9 \cdot 4 \cdot 5}$

$\sqrt{9}\sqrt{4}\sqrt{5}$

$3 \cdot 2\sqrt{5}$

$6\sqrt{5}$

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

9) $(3\sqrt{7})^2(\sqrt{98})$

$\sqrt{98} = \sqrt{49 \cdot 2}$

$= 7 \cdot \sqrt{2}$

$(3\sqrt{7})(3\sqrt{7})$

$9(7)$

63

$= 63 \cdot 7 \cdot \sqrt{2}$

$= \boxed{441\sqrt{2}}$

5B Simplifying & 5C Simplest Radical Form

Directions: Leave answers in simplest radical form.

9) $\left(3\sqrt{7}\right)^2\left(\sqrt{98}\right)$

$(3\sqrt{7})(3\sqrt{7})(\sqrt{98})$

$9\sqrt{7}\cdot\sqrt{7}(\sqrt{98})$

$(9\cdot 7)(\sqrt{98})$

$63(\sqrt{98})$

$63(7\sqrt{2})$

$441\sqrt{2}$

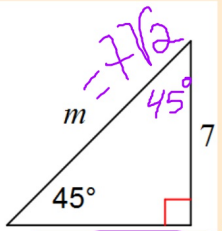
$\sqrt{98}$

$\sqrt{49\cdot 2}$

$\sqrt{49}\cdot\sqrt{2}$

$7\sqrt{2}$

1)

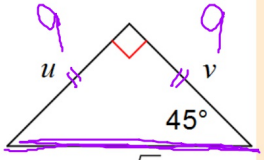


$m = 7\sqrt{2}$

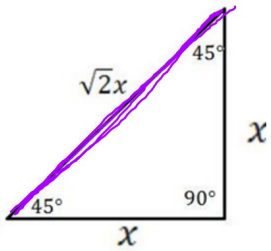
$n = 7$

$m = 7\sqrt{2}$

2)



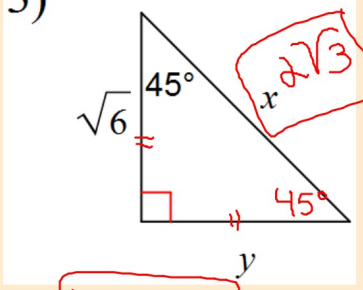
9 9



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

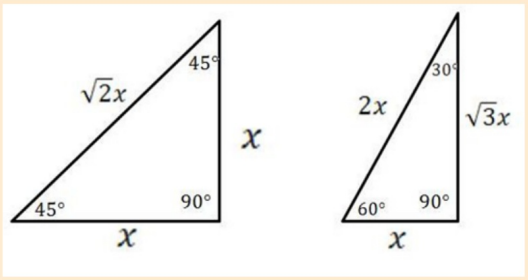
$9 = x$

3)



$2\sqrt{3}$

$y = \sqrt{6}$

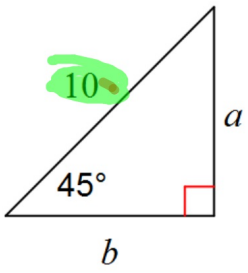


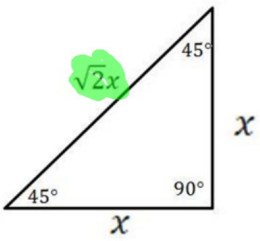
$x = \sqrt{6} \cdot \sqrt{2}$

$x = \sqrt{12}$

$x = \sqrt{4 \cdot 3} = \boxed{2\sqrt{3}}$

4)





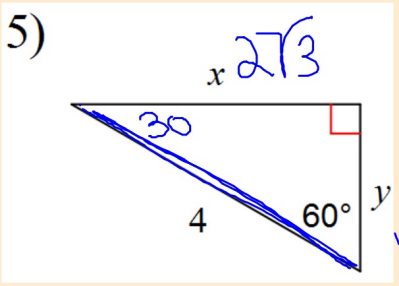
$$\frac{10}{\sqrt{2}} = \frac{\sqrt{2} \cdot x}{\sqrt{2}}$$

$$x = \frac{10}{\sqrt{2}}\left(\frac{\sqrt{2}}{\sqrt{2}}\right)$$

$$= \frac{10\sqrt{2}}{2}$$

$$= 5\sqrt{2}$$

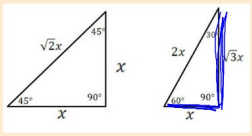
5)



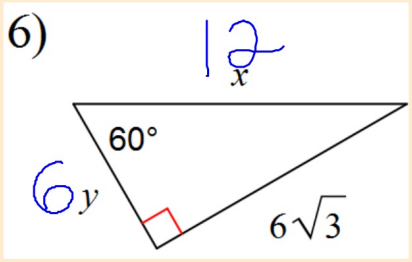
$x\ 2\sqrt{3}$

short

$y = 2$



6)

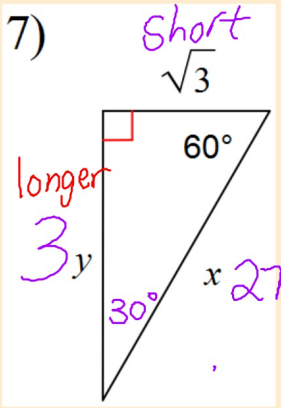


12

$\frac{6\sqrt{3}}{\sqrt{3}} = \frac{x\sqrt{3}}{\sqrt{3}}$

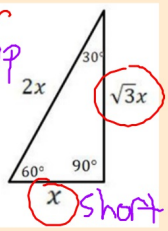
$6 = x$

7)



Short → longer

$x \Rightarrow \sqrt{3}$ hyp



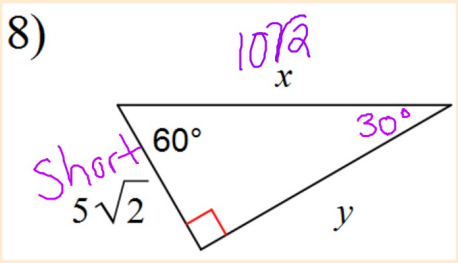
$x = \sqrt{3} \cdot 2$

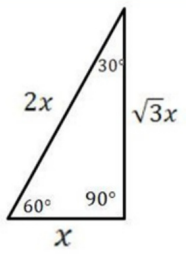
$= 2\sqrt{3}$

$y = \sqrt{3} \cdot \sqrt{3}$

$y = 3$

8)





(Longer leg) $y = \text{short} \cdot \sqrt{3}$

$y = 5\sqrt{2} \cdot \sqrt{3}$

$y = 5\sqrt{6}$

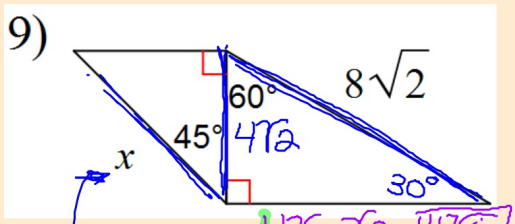
$\text{hyp} = \text{short} \cdot 2$

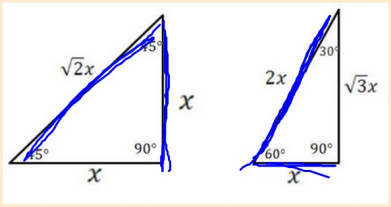
$x = (5\sqrt{2}) \cdot 2$

$x = 10\sqrt{2}$

hypotenuse

9)





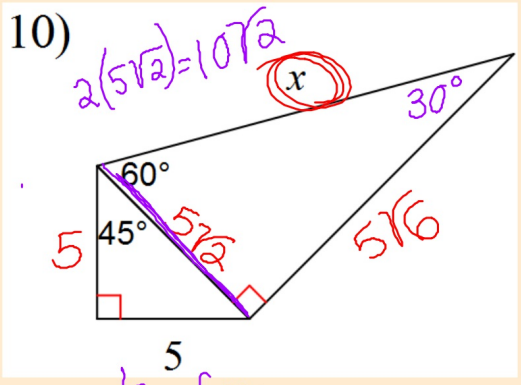
$4\sqrt{2} \cdot \sqrt{3} = \boxed{4\sqrt{6}}$ longer

$x = 4\sqrt{2} \cdot \sqrt{2}$

$x = 4 \cdot 2$

$\boxed{x = 8}$

10)



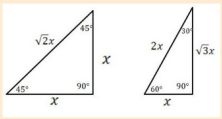
$2(5\sqrt{2}) = 10\sqrt{2}$

leg of 45-45-90

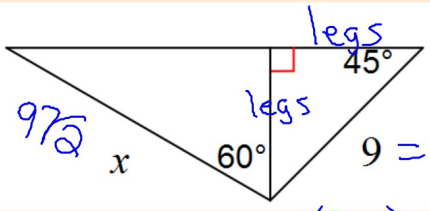
hyp = 2 · short

$= 2(5 \cdot \sqrt{2})$

$= \boxed{10\sqrt{2}}$



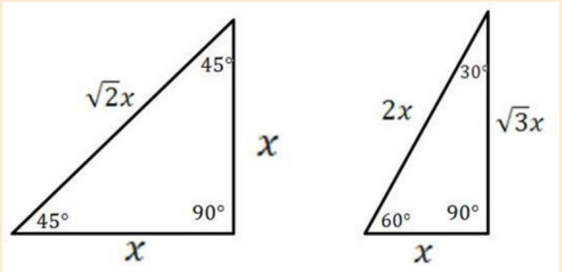
11)



$$\text{legs} = \left(\frac{9}{\sqrt{2}}\right)\left(\frac{\sqrt{2}}{\sqrt{2}}\right) \text{hyp} = \frac{18}{\sqrt{2}}\left(\frac{\sqrt{2}}{\sqrt{2}}\right)$$

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

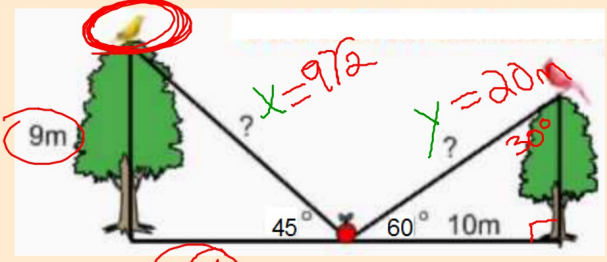
$$\frac{18\sqrt{2}}{2}$$

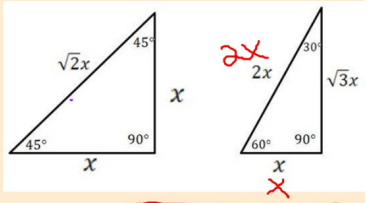


11) Two birds are sitting on the top of two different trees, and they both spot a delicious worm trying to hide in an apple on the ground.

a) How far does each bird need to fly to capture the worm?

b) Assume the birds travel at the same speed. Which bird will capture the worm? Explain your reasoning.





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$9\sqrt{2} \boxed{<} 20$

$12.7 \boxed{<} 20$

Yellow bird wins the worm!

Exercises...

Finish Review Worksheet

Study 5B/C Radicals &
Special Right Triangles