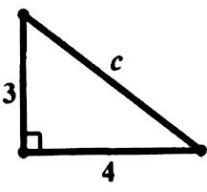
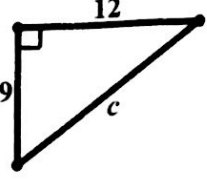
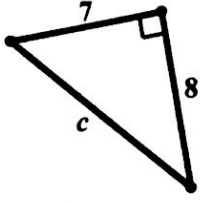
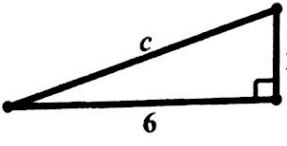
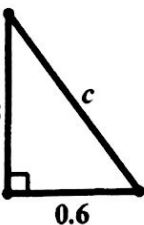
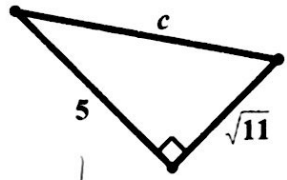


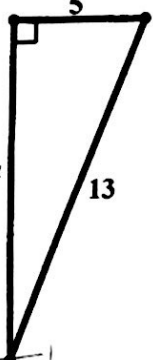
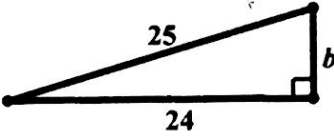
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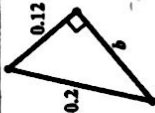
U9 CWK #2: The Pythagorean Theorem and Unknown Side Lengths

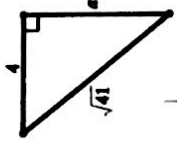
Directions: Find the length of the hypotenuse of each right triangle shown below using the Pythagorean Theorem. Leave your answer in simplest radical form.

<p>1. </p> $3^2 + 4^2 = c^2$ $9 + 16 = c^2$ $\sqrt{25} = \sqrt{c^2}$ $5 = c$ <p>$c = \boxed{5}$</p>	<p>2. </p> $9^2 + 12^2 = c^2$ $81 + 144 = c^2$ $\sqrt{225} = \sqrt{c^2}$ $15 = c$ <p>$c = \boxed{15}$</p>
<p>3. </p> $7^2 + 8^2 = c^2$ $49 + 64 = c^2$ $\sqrt{113} = \sqrt{c^2}$ <p>$c = \boxed{\sqrt{113}}$</p>	<p>4. </p> $6^2 + 2^2 = c^2$ $36 + 4 = c^2$ $\sqrt{40} = \sqrt{c^2}$ $\sqrt{4} \sqrt{10} = \sqrt{c^2}$ <p>$c = \boxed{2\sqrt{10}}$</p>
<p>5. </p> $(0.8)^2 + (0.6)^2 = c^2$ $0.64 + 0.36 = c^2$ $\sqrt{1} = \sqrt{c^2}$ $1 = c$ <p>$c = \boxed{1}$</p>	<p>6. </p> $(5)^2 + (\sqrt{11})^2 = c^2$ $25 + 11 = c^2$ $\sqrt{36} = \sqrt{c^2}$ $6 = c$ <p>$c = \boxed{6}$</p>

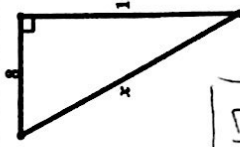
Directions: Find the length of the leg of each right triangle shown below using the Pythagorean Theorem. Leave your answer in simplest radical form.

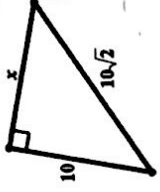
<p>7. </p> $a^2 + 5^2 = 13^2$ $a^2 + 25 = 169$ $\begin{array}{r} -25 \\ -25 \end{array}$ $\sqrt{a^2} = \sqrt{144}$ $a = 12$ <p>$a = \boxed{12}$</p>	<p>8. </p> $24^2 + b^2 = 25^2$ $576 + b^2 = 625$ $\begin{array}{r} -576 \\ -576 \end{array}$ $\sqrt{b^2} = \sqrt{49}$ $b = 7$ <p>$b = \boxed{7}$</p>
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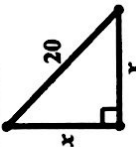
9.  $(0.12)^2 + b^2 = (0.2)^2$
 $0.0144 + b^2 = 0.04$
 $b^2 = 0.0256$
 $b = \sqrt{0.0256}$
 $b = 0.16$


10.  $a^2 + 4^2 = (\sqrt{41})^2$
 $a^2 + 16 = 41$
 $a^2 = 25$
 $a = 5$

Directions: Find the value of x using the Pythagorean Theorem. Leave your answer in simplest radical form.

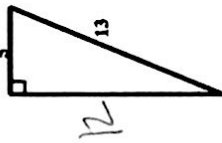
11.  $8^2 + 15^2 = c^2$
 $64 + 225 = c^2$
 $\sqrt{289} = \sqrt{c^2}$
 $17 = c$

12.  $(10)^2 + x^2 = (10\sqrt{2})^2$
 $100 + x^2 = 200$
 $x^2 = 100$
 $x = 10$

13.  $x^2 + x^2 = 20^2$
 $2x^2 = 400$
 $x^2 = 200$
 $x = \sqrt{200}$
 $x = 10\sqrt{2}$

14.  $x^2 + 2.1^2 = 2.9^2$
 $x^2 + 4.41 = 8.41$
 $x^2 = 4$
 $x = 2$

1. Find, Fix, and Justify: Megan was asked to solve for the unknown side length in the triangle below. Her work is shown below. She made a mistake when solving. Explain the mistake she made and then solve the problem correctly.



Megan's Solution:
 $a^2 + b^2 = c^2$
 $5^2 + 13^2 = c^2$
 $25 + 169 = c^2$
 $194 = c^2$
 $\sqrt{194} = c$

Explain Mistake:

13 is hypotenuse which should be c

Correct Solution:

$$5^2 + b^2 = 13^2$$

$$25 + b^2 = 169$$

$$-25 \quad -25$$

$$\sqrt{b^2} = \sqrt{144}$$

$$b = 12$$

2. Find, Fix, and Justify: Raphael was asked to solve for the length of the hypotenuse in a right triangle with legs that have side lengths of 4 and 5. His work is shown below. He made a mistake when solving. Explain the mistake and then solve the problem correctly.

Raphael's Solution:

$$a^2 + b^2 = c^2$$

$$4^2 + 5^2 = c^2$$

$$16 + 25 = c^2$$

$$41 = c$$

Explain Mistake:

forgot to square root both sides

Correct Solution:

$$4^2 + 5^2 = c^2$$

$$16 + 25 = c^2$$

$$\sqrt{41} = \sqrt{c^2}$$

$$\sqrt{41} = c$$