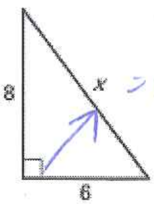
7.1 – 7.4 Quiz Review **Geometry** Name________________

7.1	I can find side lengths in right triangles	

Find the length of the hypotenuse of the right triangle

1.



$x = c$

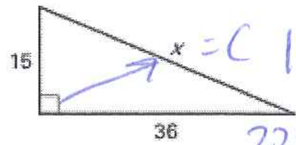
$8^2 + 6^2 = c^2$

$64 + 36 = c^2$

$\sqrt{100} = \sqrt{c^2}$

$10 = c$

2.



$x = c$

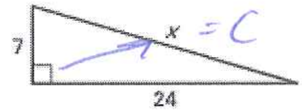
$15^2 + 36^2 = c^2$

$225 + 1296 = c^2$

$\sqrt{1521} = \sqrt{c^2}$

$39 = c^2$

3.



$x = c$

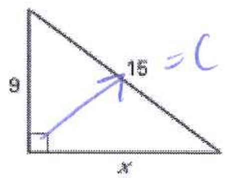
$7^2 + 24^2 = c^2$

$49 + 576 = c^2$

$\sqrt{625} = \sqrt{c^2}$

$25 = c^2$

7.



$15 = c$

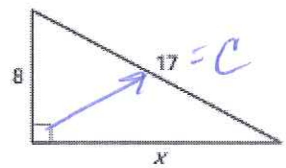
$9^2 + x^2 = 15^2$

$81 + x^2 = 225$

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

$x = 12$

8.



$17 = c$

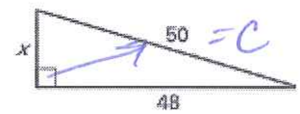
$8^2 + x^2 = 17^2$

$64 + x^2 = 289$

$\sqrt{x^2} = \sqrt{225}$

$x = 15$

9.



$50 = c$

$x^2 + 48^2 = 50^2$

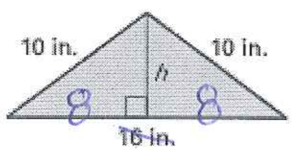
$x^2 + 2304 = 2500$

$\sqrt{x^2} = \sqrt{196}$

$x = 14$

Find the area of the isosceles triangle.

10.



8 8

h 10=c 8

$h^2 + 8^2 = 10^2$

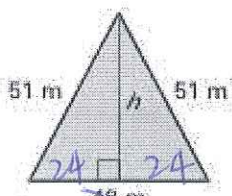
$h^2 + 64 = 100$

$h^2 = 36$

$h = 6$

$A = \frac{b \cdot h}{2} = \frac{(16)(6)}{2} = 48 \text{ in}^2$

11.



24 24

h 51=c 24

$h^2 + 24^2 = 51^2$

$h^2 + 576 = 2601$

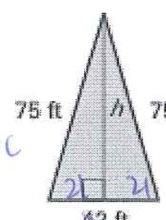
$h^2 = 2025$

$h = 45$

$A = \frac{b \cdot h}{2} = \frac{(48)(45)}{2}$

1080 m^2

12.



21 21

h 75=c 21

$h^2 + 21^2 = 75^2$

$h^2 + 441 = 5625$

$h^2 = 5184$

$h = 72$

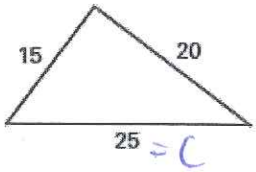
$A = \frac{b \cdot h}{2} = \frac{(42)(72)}{2}$

1512 ft^2

7.2	I can use the converse to determine if a triangle is right, acute, or obtuse	

Tell whether the triangle is a right triangle.

1.



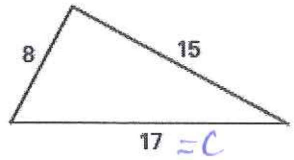
= C

$15^2 + 20^2 \ \square\ 25^2$

$225 + 400 \ \square\ 625$

$625 = 625$ yes

2.



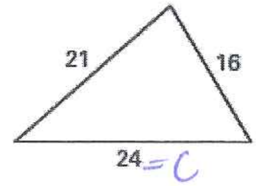
= C

$8^2 + 15^2 \ \square\ 17^2$

$64 + 225 \ \square\ 289$

$289 = 289$ yes

3.



= C

$21^2 + 16^2 \ \square\ 24^2$

$441 + 256 \ \square\ 576$

$697 \neq 576$

no

Decide whether the numbers can represent the side lengths of a triangle. If they can, classify the triangle as *right*, *acute*, or *obtuse*.

1. 5, 12, 13

$5 + 12 = 17 > 13$ yes

$5^2 + 12^2 \ \square\ 13^2$

$169 = 169$ right

2. $\sqrt{8}$, 4, 6

2.83

$\sqrt{8} + 4 = 6.83 > 6$ yes

$\sqrt{8}^2 + 4^2 \ \square\ 6^2$

$24 < 36$ obtuse

3. 20, 21, 28

$20 + 21 = 41 > 28$ yes

$20^2 + 21^2 \ \square\ 28^2$

$841 > 784$ acute

4. 15, 36, 39

$15 + 36 = 51 > 39$ yes

$15^2 + 36^2 \ \square\ 39^2$

$1521 = 1521$ Right

5. $\sqrt{13}$, 10, 12

3.61

$\sqrt{13} + 10 = 13.61 > 12$ yes

$\sqrt{13}^2 + 10^2 \ \square\ 12^2$

$113 < 144$ obtuse

6. 14, 48, 50

$14 + 48 = 62 > 50$ yes

$14^2 + 48^2 \ \square\ 50^2$

$2500 = 2500$ right

Review	I can simplify and rationalize radicals.	

Express $4\sqrt{75}$ in simplest radical form.

$4\sqrt{25}\sqrt{3}$

$4(5)\sqrt{3}$

$20\sqrt{3}$

Express $-3\sqrt{48}$ in simplest radical form.

$-3\sqrt{16}\sqrt{3}$

$-3(4)\sqrt{3}$

$-12\sqrt{3}$

Express $5\sqrt{72}$ in simplest radical form.

$5\sqrt{36}\sqrt{2}$

$5(6)\sqrt{2}$

$30\sqrt{2}$

Express $2\sqrt{108}$ in simplest radical form.

$2\sqrt{36}\sqrt{3}$

$2(6)\sqrt{3}$

$12\sqrt{3}$

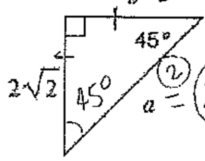
Rationalize:

1. $\frac{11}{\sqrt{13}} \cdot \frac{\sqrt{13}}{\sqrt{13}} = \frac{11\sqrt{13}}{\sqrt{169}} = \frac{11\sqrt{13}}{13}$

2. $\frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{\sqrt{9}} = \frac{2\sqrt{3}}{3}$

3. $\frac{14}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{14\sqrt{5}}{\sqrt{25}} = \frac{14\sqrt{5}}{5}$

1)

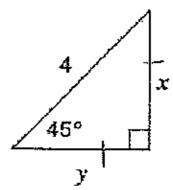


① $b = 2\sqrt{2}$

② $a = (2\sqrt{2})(\sqrt{2}) = 2\sqrt{4}$
$= 2(2)$
$= 4$

$a = 4,\ b = 2\sqrt{2}$

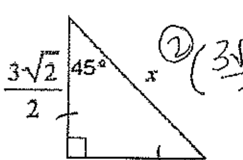
2)



① $\frac{4}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{2}$
$= 2\sqrt{2}$

$x = 2\sqrt{2},\ y = 2\sqrt{2}$

3)

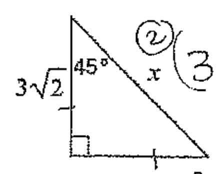


② $\left(\frac{3\sqrt{2}}{2}\right)(\sqrt{2}) = \frac{3(\cancel{2})}{\cancel{2}} = 3$

① $y = \frac{3\sqrt{2}}{2}$

$x = 3,\ y = \frac{3\sqrt{2}}{2}$

4)

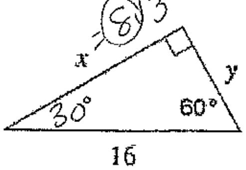


② $x\ (3\sqrt{2})(\sqrt{2}) = 3(2) = 6$

① $y = 3\sqrt{2}$

$x = 6,\ y = 3\sqrt{2}$

7)

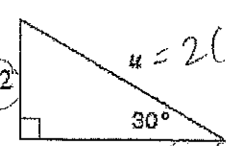


$x = 8\sqrt{3}$

$y = \frac{16}{2} = 8$

$x = 8\sqrt{3},\ y = 8$

8)

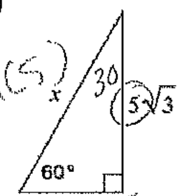


$u = 2(2) = 4$

$v = 2\sqrt{3}$

$u = 4,\ v = 2\sqrt{3}$

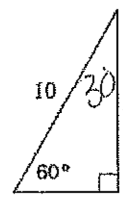
11)



$10 = 2(5)$ 30 $y = 5$

$x = 10,\ y = 5$

12)

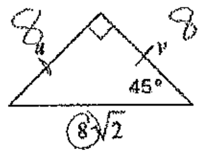


30 $x = 5\sqrt{3}$

$y = 10/2 = 5$

$x = 5\sqrt{3},\ y = 5$

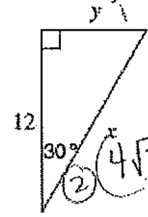
13)



8 8

$u = 8,\ v = 8$

14)



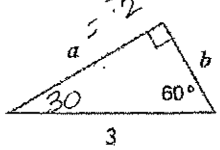
$y = 4\sqrt{3}$

① $\frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3}$

② $(4\sqrt{3})(2) = 8\sqrt{3}$

$x = 8\sqrt{3},\ y = 4\sqrt{3}$

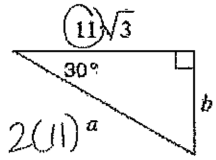
15)



$a = \frac{3}{2}\sqrt{3}$ $b = \frac{3}{2}$ 30

$a = \frac{3\sqrt{3}}{2},\ b = \frac{3}{2}$

16)



11

$22 = 2(11)$

$a = 22,\ b = 11$