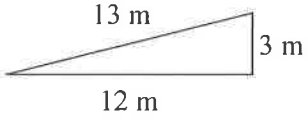
Geometry Name Key

Review WS for PC #2 (9.1 - 9.3)

State if each triangle is acute, obtuse, or right. Show your work to explain your reasoning.

1)



$a^2 + b^2 \stackrel{?}{=} c^2$

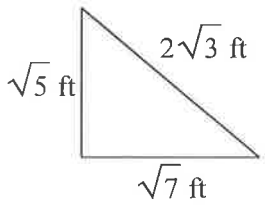
$3^2 + 12^2 \stackrel{?}{=} 13^2$

$9 + 144 \stackrel{?}{=} 169$

$153 < 169$

Obtuse

2)



$(\sqrt{5})^2 + (\sqrt{7})^2 \stackrel{?}{=} (2\sqrt{3})^2$

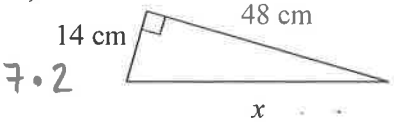
$5 + 7 \stackrel{?}{=} 4 \cdot 3$

$12 = 12$

Right

Find the missing side of each triangle. What pythagorean triplet family does this belong to?

3)



$24 \cdot 2$

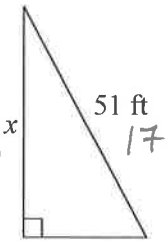
$7 \cdot 2$

$25 \cdot 2$

X = 50

7-24-25

4)



X = 45

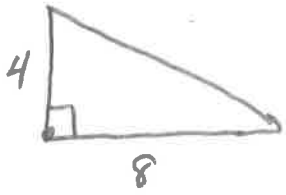
$15 \cdot 3$

$17 \cdot 3$

$8 \cdot 3$

8-15-17

5) UPS trucks are out making deliveries. Two drivers met for lunch and are going back out on their deliveries. One driver goes 4 miles north and the other drives 8 miles east. What is the direct distance between the two drivers?



$4^2 + 8^2 = c^2$

$16 + 64 = c^2$

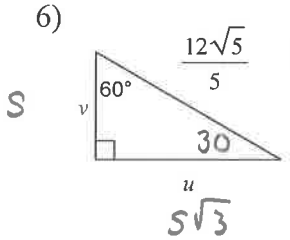
$\sqrt{80} = c^2$

$\sqrt{16}\sqrt{5}$

$c = 4\sqrt{5}$ miles

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

6)



25

$\frac{1}{2} \cdot 25 = \frac{12\sqrt{5}}{5} \cdot \frac{1}{2}$

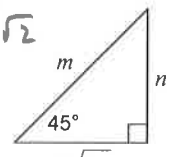
$S = \frac{12\sqrt{5}}{10}$

$S = \frac{6\sqrt{5}}{5}$

$V = \frac{6\sqrt{5}}{5}$

$U = \frac{6\sqrt{5}}{5} \cdot \sqrt{3} = \frac{6\sqrt{15}}{5}$

7)



$e = 2\sqrt{10}$

$n = 2\sqrt{10}$

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

$2\sqrt{20}$

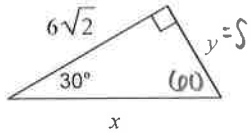
$2\sqrt{4}\sqrt{5}$

$2 \cdot 2\sqrt{5}$

$m = 4\sqrt{5}$

Find the area and perimeter of the triangle. Leave your answers in simplist radical form.

8) $5\sqrt{3}$



Perimeter

$2\sqrt{6}+4\sqrt{6}+6\sqrt{2}$

$6\sqrt{6}+6\sqrt{2}$ units

5

25

$\text{Area} = \frac{1}{2}(4\sqrt{6})(6\sqrt{2})$

$= 12\sqrt{12} = 12\sqrt{4}\sqrt{3}$

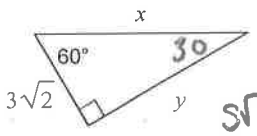
$= 24\sqrt{3}$ units^2

$5\sqrt{3} = 6\sqrt{2}$

$s = \frac{6\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6\sqrt{6}}{3} = 2\sqrt{6}$

$y = 2\sqrt{6}$ $\quad x = 2(2\sqrt{6}) = 4\sqrt{6}$

9) 25



$5\sqrt{3}$

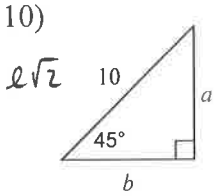
$x = 2(3\sqrt{2}) = 6\sqrt{2}$

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

Perimeter $= 3\sqrt{2} + 6\sqrt{2} + 3\sqrt{6} =$ $9\sqrt{2}+3\sqrt{6}$ units

$A = \frac{1}{2}(3\sqrt{2})(3\sqrt{6}) = \frac{9\sqrt{12}}{2} = \frac{9\sqrt{4}\sqrt{3}}{2} =$ $9\sqrt{3}$ units^2

10)



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$\ell\sqrt{2} = 10$

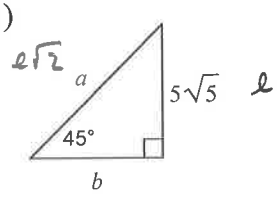
$\ell = \frac{10}{\sqrt{2}} = \frac{10\sqrt{2}}{2} = 5\sqrt{2}$

Perimeter $= 5\sqrt{2} + 5\sqrt{2} + 10$

$=$ $10\sqrt{2}+10$ units

$A = \frac{1}{2}(5\sqrt{2})(5\sqrt{2}) = \frac{25 \cdot 2}{2} =$ 25 units^2

11)



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

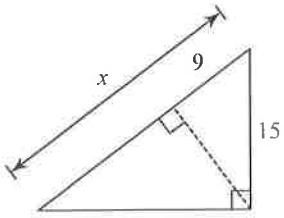
Perimeter $= 5\sqrt{5} + 5\sqrt{5} + 5\sqrt{10}$

$=$ $10\sqrt{5}+5\sqrt{10}$ units

$A = \frac{1}{2}(5\sqrt{5})(5\sqrt{5}) = \frac{1}{2} \cdot 25 \cdot 5 =$ $\frac{125}{2}$ units^2

Find the missing length indicated. Leave your answer in simplest radical form.

12)



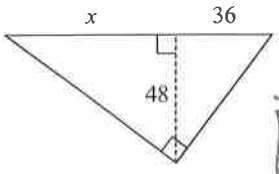
$15^2 = 9 \cdot x$

$225 = 9x$

$\frac{225}{9} = x$

$25 = x$

13)

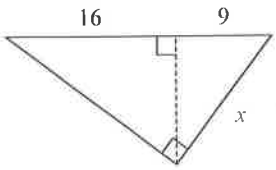


$48^2 = 36x$

$2304 = 36x$

$64 = x$

14)

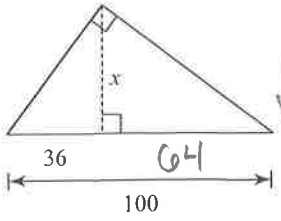


$x^2 = 9 \cdot 25$

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

$x = 15$

15)



$x^2 = 36 \cdot 64$

$\sqrt{x^2} = \sqrt{2304}$

$x = 48$