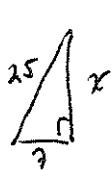


**Honors Geometry REVIEW**

Name Key

1. In the triangle below  
 a. Find the area using the pythagorean theorem.  
 b. Find the measure of one of the base angles.

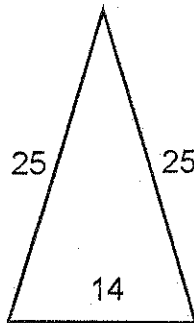


$$7^2 + x^2 = 25^2$$

$$x = 24$$

$$\text{area} = \frac{1}{2}(14)(24) = \boxed{168}$$

$$\cos^{-1} \frac{7}{25} = \boxed{74^\circ}$$



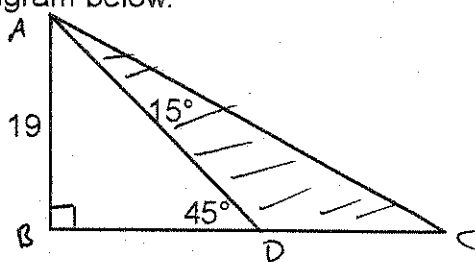
2. Find the exact area of the obtuse triangle in the diagram below.

$$\angle BAC = 60^\circ$$

$$BC = 19\sqrt{3}$$

$$DC = 19\sqrt{3} - 19$$

$$\text{Area} = \frac{1}{2}(19\sqrt{3}-19)(19) = \boxed{\frac{361}{2}(\sqrt{3}-1)}$$



3. Find the exact value of x.

$$a = \sqrt{7^2 + 1^2} = \sqrt{48} = 4\sqrt{3}$$

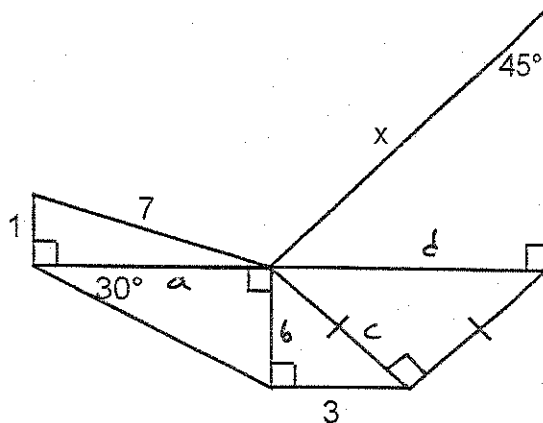
$$b = 4$$

$$c = 5$$

$$d = 5\sqrt{2}$$

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

$$= \boxed{10}$$



4. In right triangle  $\triangle NOP$ ,  $NO$  is 2 units longer than  $NP$ , and  $OP$  is 3 units longer than  $NO$ . Find the length of the hypotenuse to the nearest hundredth. (Use the quadratic formula).

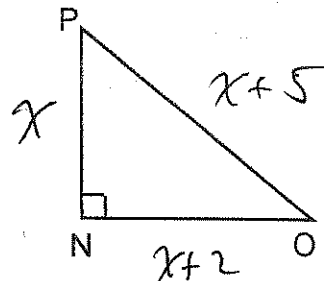
$$x^2 + (x+2)^2 = (x+5)^2$$

$$x^2 - 6x - 21 = 0$$

$$x = \frac{6 \pm \sqrt{36 + 84}}{2}$$

$$x = 8.47722 \dots$$

$$\boxed{x+5 = 13.48}$$

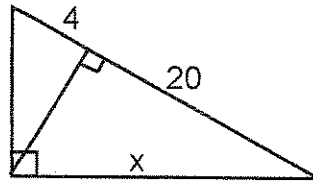


5. Find the value of  $x$  in simplified radical form:

$$x^2 = (20)(24)$$

$$x^2 = 480$$

$$x = 4\sqrt{30}$$



6. In the triangle below find:

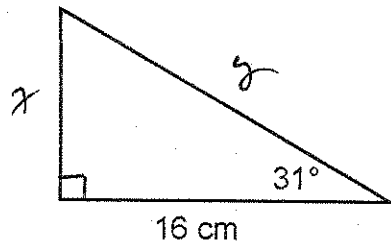
- the area
- the perimeter (both to nearest hundredth).

$$x = 16 \tan 31^\circ$$

$$= 9.61377$$

$$y = 16 \div \cos 31^\circ$$

$$= 18.66613$$



$$\text{area} = \frac{1}{2}(16)(9.6\dots) = 76.9 \text{ cm}^2$$

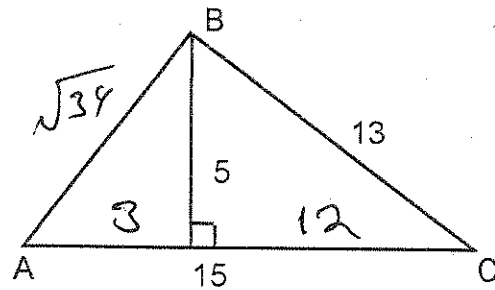
$$\text{Perim} = 16 + x + y = 44.28 \text{ cm}$$

7. Is  $\triangle ABC$  acute, right, or obtuse?

12, 3,  $\sqrt{39}$  from pyth thm

$$(\sqrt{39})^2 + (12)^2 < (15)^2$$

therefore obtuse



8. ON A SEPARATE PIECE OF PAPER construct an isosceles right triangle with the same area as the right triangle below.

