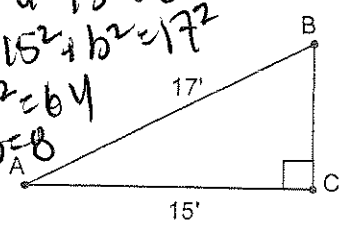
Area

Name_____

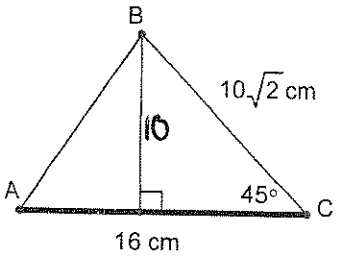
Find the area of ΔABC SHOW FORMULA AND SUBSTITUTIONS LABEL ANSWER

$a^2+b^2=c^2$
$15^2+b^2=17^2$
$b^2=64$
$b=8$



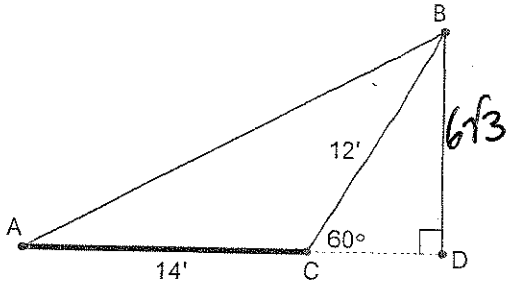
1.

$A=\frac{1}{2}bh$
$=\frac{1}{2}(15)(8)$
$=60\ ft^2$



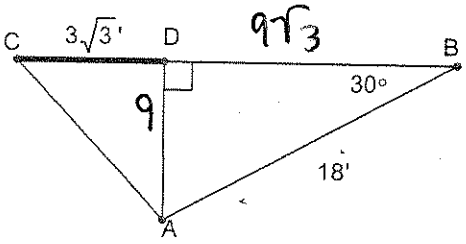
2.

$A=\frac{1}{2}bh$
$=\frac{1}{2}(16)(10)$
$=80\ cm^2$



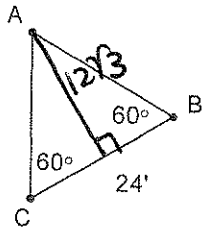
3.

$A=\frac{1}{2}bh$
$=\frac{1}{2}(14)(6\sqrt{3})$
$=42\sqrt{3}\ ft^2$
$\approx 72.78\ ft^2$



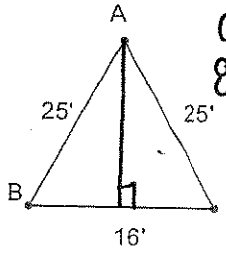
4.

$A=\frac{1}{2}bh$
$=\frac{1}{2}(12\sqrt{3})(9)$
$=54\sqrt{3}\ ft^2$
$\approx 93.53\ ft^2$



5.

$A=\frac{1}{2}bh$
$=\frac{1}{2}(24)(12\sqrt{3})$
$=144\sqrt{3}\ ft^2$
$\approx 249.46\ ft^2$

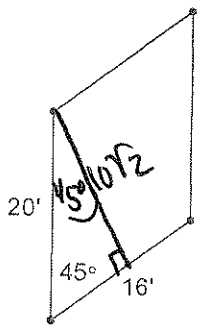


$a^2+b^2=c^2$
$8^2+b^2=25^2$
$b^2=561$
$b=\sqrt{561}$

6.

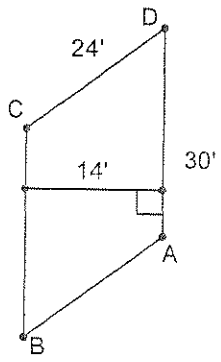
$A=\frac{1}{2}bh$
$=\frac{1}{2}(16)(\sqrt{561})$
$=8\sqrt{561}\ ft^2$
$\approx 189.48\ ft^2$

Find the area of parallelogram ABCD



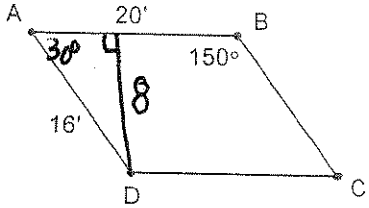
7.

$A=bh$
$A=(16)(10\sqrt{2})$
$=160\sqrt{2}\ ft^2$
$\approx 226.27\ ft^2$



8.

$A=bh$
$=(30)(14)$
$=420\ ft^2$

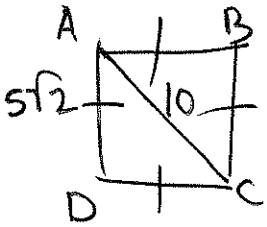


9.

$A=bh$
$=(20)(8)$
$=160\ ft^2$

Find the area of the given figure.☺

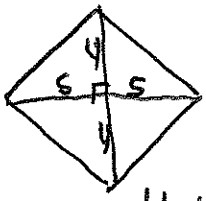
10. Square ABCD
Diagonal 10 cm



$A = s^2$
$= (5\sqrt{2})^2$
$= (5\sqrt{2})(5\sqrt{2})$
$= 25 \cdot \sqrt{4}$
$= 25 \cdot 2$
$= 50\ cm^2$

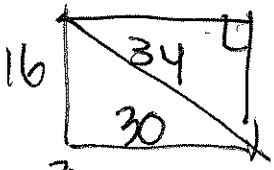
OR
$A = \frac{d_1 \cdot d_2}{2}$
$= \frac{8 \cdot 10}{2} = 40$

11. Rhombus
Diagonals 8 cm and 10 cm



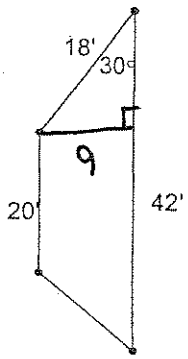
$A_{RHOMBUS} = 4 \cdot A_{TRIANGLES}$
$= 4 \cdot \frac{1}{2} b \cdot h$
$= 4 \cdot \frac{1}{2}(5)(4)$
$= 40\ cm^2$

13. Rectangle
Diagonal 34 cm
One side 16 cm



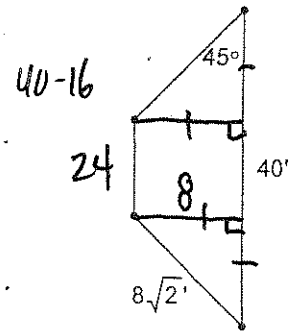
$34^2 = 16^2 + b^2$
$900 = b^2$
$30 = b$
$A = bh$
$= (30)(16)$
$= 480\ cm^2$

14. Trapezoid



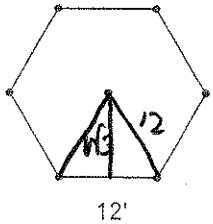
$A = \frac{1}{2}(b_1 + b_2)h$
$= \frac{1}{2}(20+42)(9)$
$= 279\ ft^2$

15. Isosceles Trapezoid



$A = \frac{1}{2}(b_1 + b_2)h$
$= \frac{1}{2}(24+40)(8)$
$= 256\ ft^2$

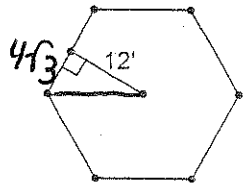
16. Regular Hexagon



$A = \frac{1}{2}$ APOTHEM $\cdot$ P (height of $\triangle$)
$= \frac{1}{2}(6\sqrt{3})(6 \cdot 12)$

$A_{HEX} = 6 \cdot A_{TRI}$
$= 6 \cdot \frac{1}{2} bh$
$= 6 \cdot \frac{1}{2}(12)(6\sqrt{3})$
$= 216\sqrt{3}\ ft^2$
$\approx 374.12\ ft^2$

17. Regular Hexagon



$A_{HEX} = A_{12\ TRI}$
$= 12 \cdot \frac{1}{2}(b)(h)$
$= 12 \cdot \frac{1}{2}(4\sqrt{3})(12)$
$= 288\sqrt{3}\ ft^2$
≈ 498.83