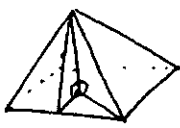
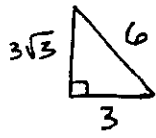
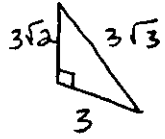
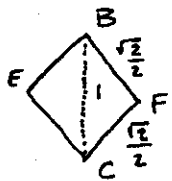


CYPRESS LAKE INVITATIONAL GEOMETRY TEAM SOLUTIONS
 JANUARY 25, 1997

(1)    $3\sqrt{2} + 3\sqrt{2} = 6\sqrt{2}$

(2) $CH = \frac{20+10}{2} = 15$ $y = \frac{10+15}{2} = 12\frac{1}{2}$ $m = \frac{15+20}{2} = \frac{35}{2}$
 $y+m = \frac{25}{2} + \frac{35}{2} = 30$

(3) BEFORE: $(w+2)(w+5) - (w)(w+3) = 46$ BEFORE $w+2 \times w+5$
 $w^2 + 7w + 10 - w^2 - 3w = 46$ 11×14
 $4w = 36$
 $w = 9$

(4) AREA OF ABCD = 1 AREA OF BFCE = \rightarrow  $A = (\frac{\sqrt{2}}{2})^2 = \frac{2}{4} = \frac{1}{2}$ SO RATIO IS 2:1

(5) $10 \cdot 10 = 1 \cdot x$
 $100 = x$
 $d = 101$

(6) $A_{\Delta WAX} = \frac{1}{2}(3)(3) = \frac{9}{2}$
 $A_{OA} = \frac{1}{4}(3)^2\pi = \frac{9}{4}\pi$
 $A_{\Delta YCZ} = \frac{1}{2}(2)(2) = 2$
 $A_{OC} = \frac{1}{4}(2)^2\pi = \pi$
 $A_{\square} = (6)(20) = 120$

$A = 120 - (\frac{9}{4}\pi + \frac{9}{4}\pi) + (\frac{4}{2} + \frac{9}{2}) = \frac{253}{2} - \frac{13}{4}\pi = \frac{506 - 13\pi}{4}$

(7) 540
 $\frac{-180}{360}$
 $3(x+y) + 15 = 360$
 $3(x+y) = 345$
 $x+y = 115$
 $m\angle CDE + 15 = m\angle ABC$
 $115 + 15 =$
 $130 =$

(8) $\sqrt{6^2 - 3^2} + \sqrt{12^2 - 6^2}$
 $\sqrt{27} + \sqrt{108}$ \rightarrow $3\sqrt{3} + 6\sqrt{3}$
 $9\sqrt{3}$

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GEOMETRY TEAM SOLUTIONS

(9) $x^2 + 2x - 1 = 34$
 $x^2 + 2x - 35 = 0$
 $(x+7)(x-5) = 0$

$x = -7$ or $x = +5$

(10)
$$\begin{array}{r} 164 \\ 153 \\ 166 \\ 175 \\ 171 \\ + 169 \\ \hline 998 \end{array}$$

$$\begin{array}{r} 1440 \\ - 998 \\ \hline 442 = 6x + 5x + 4x + 2x \\ 442 = 17x \\ 26 = x \end{array}$$

LARGEST: 175
SMALLEST: 52

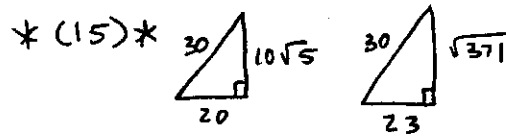
9100

(11) $2y + 14 + 2x + 4 + 6x + 12 = 78$
 $2y + 8x + 30 = 78$

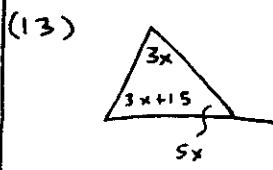
$2y + 8x = 48$; but $2x + 4 = 2x + y$
 $4 = y$

$8x = 40$
 $x = 5$

(12) $180 - 56 - 84 = 40$



$10\sqrt{5} - \sqrt{371}$



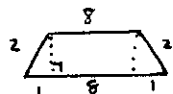
$11x + 15 = 180$
 $11x = 165$
 $x = 15$
 $180 - 75 = 105$

(14)



$A = \frac{5^2 \sqrt{3}}{4} = \frac{(2\sqrt{3})^2 \sqrt{3}}{4} = 3\sqrt{3}$

SO $A = 3\sqrt{3}$
 $B = 9\sqrt{3}$
 $C = 2$



$A = \frac{1}{2}h(b_1 + b_2) = \frac{1}{2}(\sqrt{3})(18) = 9\sqrt{3}$

$2 + 12\sqrt{3}$



$\tan 36 = \frac{1/2}{x}$
 $x = \frac{1}{2 \tan 36} \approx .688$

$A = \frac{1}{2}Pa = \frac{1}{2}(5)(.688) \approx 1.72$

(15) ABOVE TO RIGHT *