TEAM QUESTION SOLUTIONS

1) A = 60
B = 108
C = 108 - 60 = 48

$$\frac{60\,(108 - 48)}{3\,|48|} + \frac{(60 + 48)}{108} = \frac{360}{144} + \frac{108}{108}$$

$$= 25 + 1 = \mathbf{26}$$

2) $\angle A = 104$, $\angle B = 142$, $\angle C = 80$, $\angle D = 76$, and $\angle E = 136$
SUM OF THESE = 538

$180\,(n - 2) = 180\,(5 - 2) = 540$

SUM OF ANGLES ARE NOT EQUAL
$\therefore$ ERROR IN DATA.

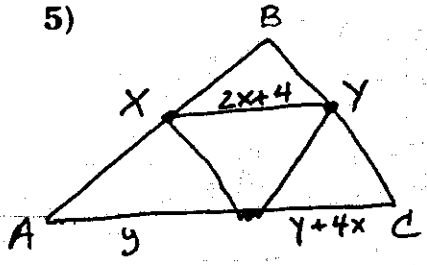
3) A = 14, B = 20, C = 12

$$\frac{(14)(20) - (12)^2}{\frac{1}{3}(12)} = \frac{280 - 144}{4} = \frac{136}{4} = \mathbf{34}$$

4) A = True B = False C = True D = True

$$\frac{0}{B}\ \frac{1}{D}\ \frac{1}{A}\ \frac{1}{C}_{\text{base 2}} = 1 + 2 + 4 = 7_{\text{base 10}} \text{ or just } 7$$

5)



$2x + 4 = y$ $\quad 2x + 4 = y + 4x$

$y = y + 4x$

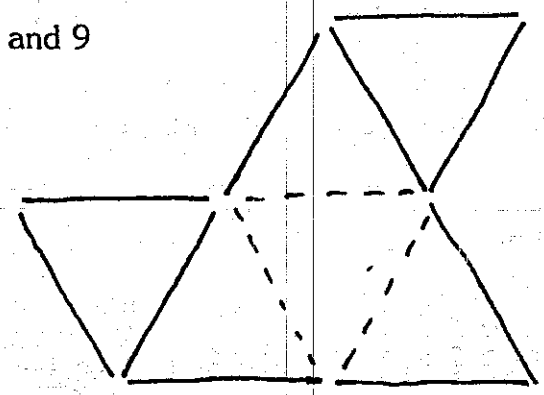
$4x = 0$

$x = 0$ $\quad 2(0) + 4 = y$ $\quad y = 4$

$AC = y + y + 4x = 4 + 4 + 4(0) = 8$

$(0)(4)(8) = \mathbf{0}$

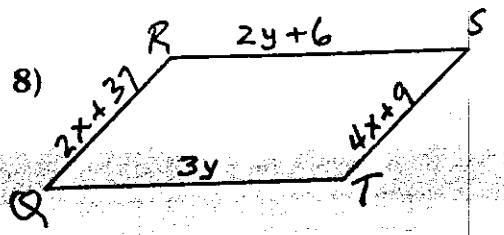
6) Remove 7, 8, and 9



7) A. False B. True C. False D. True

$$\frac{0}{A}\ \frac{1}{B}\ \frac{0}{C}\ \frac{1}{D}_{\text{base two}} = 1 + 4 = \mathbf{5}$$

8)



$2y + 6 = 3y$ $\quad 4x + 9 = 2x + 37$

$y = 6$ $\quad 2x = 28$ $\quad x = 14$

$x - y = 14 - 6 = 8$ $\quad 8^2 = \mathbf{64}$

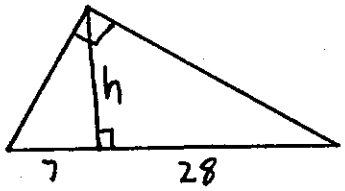
9) $12^2 + 11^2 + 10^2 + 9^2 + 8^2 + 7^2 + 6^2 + 5^2 + 4^2 + 3^2 + 2^2 + 1^2 = \mathbf{650}$

10) Infinitely many

11) $P = 8$ $\quad R = 6$ $\quad S = 10$ $\quad Q = 3$ $\quad T = 58$

$3(58)\Pi = \mathbf{174}\Pi$

12) height $= \sqrt{(7)(28)} = 14$

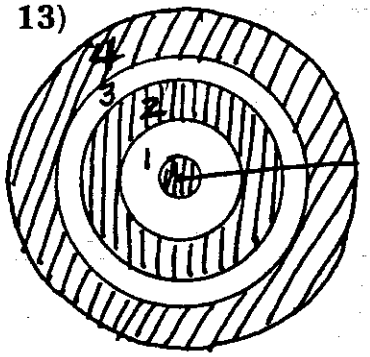


$P = 7\sqrt{5} + 14\sqrt{5} + 7 + 28 = 35 + 21\sqrt{5}$

$A = \frac{1}{2}(14)(35) = 245$

$245 + 35 + 21\sqrt{5} = \mathbf{280 + 21\sqrt{5}}$

13)



Inside circle has radius of 3 cm $\quad A = 3^2\Pi = 9\Pi$

Circle 1 has radius of 4 + 3 = 7 cm $\quad A = 49\Pi$

Circle 2 has radius of 7 + 4 = 11 cm $\quad A = 121\Pi$

Circle 2 minus Circle 1 = $(121 - 49)\Pi = 72\Pi$

Circle 3 has radius of 11 + 4 = 15 cm $\quad A = 225\Pi$

Circle 4 has radius of 15 + 4 = 19 cm $\quad A = 361\Pi$

Circle 4 minus Circle 3 = $(361 - 225)\Pi = 136\Pi$

Total Area = $136\Pi + 72\Pi + 9\Pi = \mathbf{217\Pi\ cm^2}$

14) A = {January, June, July} $\quad n(A) = 3$

B = {September, April, June, November} $\quad n(B) = 4$

C = {February} $\quad n(C) = 1$

$n(A \cup C) = 4$ $\quad 4 - 4 = \mathbf{0}$

15) A = 0 $\quad$ B = 1 $\quad$ C = 1 $\quad$ D = 0 $\quad$ E = 1 $\quad$ F = 1

(0 = impossible $\quad$ 1 = possible)

$\frac{0}{C}\ \frac{1}{D}\ \frac{1}{B}\ \frac{1}{E}\ \frac{0}{A}\ \frac{1}{F}$ base 2 $\quad = \quad 1 + 4 + 8 + 32 = \mathbf{45}$