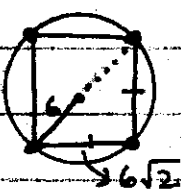
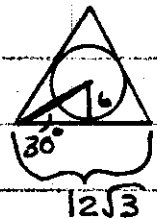
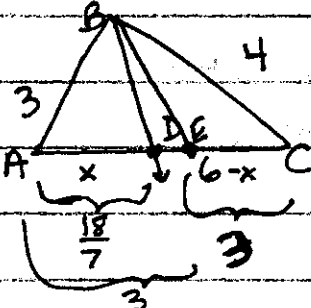
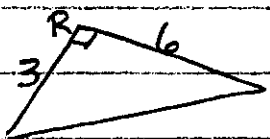


1.  $AB^2 = DB \cdot BC$ ;  $AD^2 = DB \cdot DC$ ;  $AC^2 = BC \cdot DC$  } Sum = 7.4  
 $9 = BD \cdot 5$        $16 = BC \cdot 5$        $AB^2 = (3.2)(1.8)$   
 $BD = 1.8$        $3.2 = BC$        $AB = 2.4$

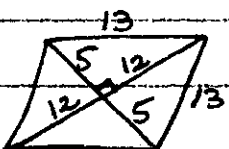
2.   Square area = 72  
 EG  $\Delta$  area =  $(12\sqrt{3})^2 \cdot \frac{\sqrt{3}}{4} = 108\sqrt{3}$   
 Ratio =  $\frac{3\sqrt{3}}{2}$  or  $1.5\sqrt{3}$

3.  $\frac{2}{1}$  = side ratio       $\frac{27}{1}$  = vol. ratio       $\frac{27}{1} = \frac{81000\pi}{x}$        $3000\pi = x$

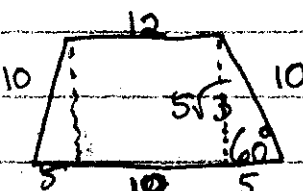
4.   $\frac{3}{x} = \frac{4}{6-x}$       Difference =  $3 - \frac{18}{7} = \frac{3}{7}$   
 $18 - 3x = 4x$   
 $18 = 7x$   
 $\frac{18}{7} = x$

5.  Shaded region =  $\pi R^2 - \frac{1}{2}(3 \cdot 6) = \pi(45) - 9$   
 $45\pi - 9$  =  $\frac{45\pi}{4} - 9$  or  $11.25\pi - 9$

6. Average =  $\frac{2}{\frac{1}{10} + \frac{1}{8}} = \frac{80}{9}$  = rate       $t \cdot r = d$        $t \cdot \frac{80}{9} = 18$   
 $t = 2.025$  or  $2\frac{1}{40}$  or  $\frac{81}{40}$

7.  Perimeter =  $52 = a$   
 $B = \frac{120^\circ}{360^\circ} (2 \cdot \pi \cdot 10) = \frac{20}{3}\pi$   
 $A + \frac{6B}{\pi} = 52 + 40 = \span style="border: 1px solid black; padding: 2px;">92$

8. median =  $\frac{1}{2}(b_1 + b_2)$  so  $b_1 + b_2 = 24$       52 = Sum \*

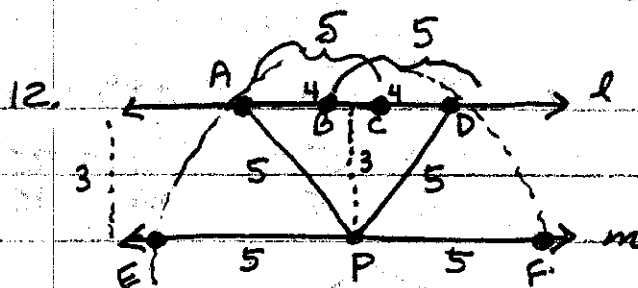
9.   $b_1 = 12$        $b_2 = 10 + 10 = 20$   
 $h = 5\sqrt{3}$        $A = \frac{1}{2}(32)(5\sqrt{3}) = \span style="border: 1px solid black; padding: 2px;">80\sqrt{3}$

10.  $4(12)(x)(x+13)$        $x^2 + 13x - 48 = 0$        $\frac{-13 + \sqrt{361}}{2}$   
 $48 = x^2 + 13x$        $x = \frac{-13 \pm \sqrt{169 - 4(-48)}}{2}$        $x = \span style="border: 1px solid black; padding: 2px;">3$

# Team Geometry

11.  $A = \frac{1}{2}n(n-3) = 14$   
 $B = n-3 = 4$   
 $C = (n-2)180 = 900$

**918**



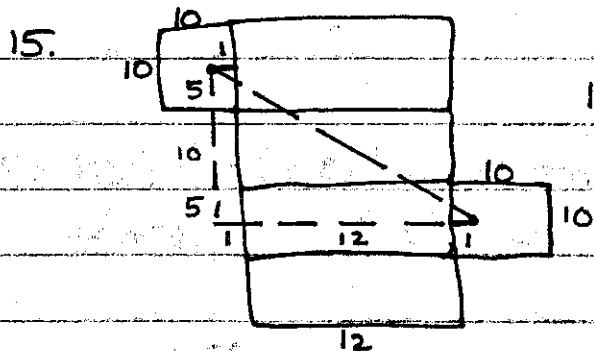
$\triangle PEA, \triangle PDF, \triangle APD, \triangle ACP$   
 $\triangle PBD = \boxed{6}$  points

13.  $\vec{GA} \cup \vec{GB} = \neq \overline{AGB}$

$\neq \overline{AGB} \cap \vec{GE} = G$

$G \cup \overline{FG} = \boxed{\overline{FG}}$  must have "segment" or "segment symbol" on top

14.  $\pi r^2 h - \frac{1}{3}\pi r^2 h = \frac{2}{3}\pi \cdot 6^2 \cdot 10 = \boxed{240\pi}$



$14^2 + 20^2 = d^2$   
 $d \approx 24.4$

**24**