
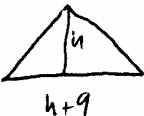


1.   $x = 180 - 2 \cdot 67$   
 $= 180 - 134$   
 $= 46$  B

2.  $\frac{2+6}{2} = -2 = x$   
 $\frac{-8+5}{2} = -\frac{3}{2} = y$  B

3.  $(\frac{1}{2})^3 = \frac{1}{8}$  D

4.  $h = \sqrt{12^2 + 9^2} = \sqrt{144 + 81} = \sqrt{225}$   
 $= 15$  B


5.   $\frac{1}{2} \cdot h \cdot (h+9) = 180$   
 $h^2 + 9h - 360 = 0$   
 $(h-15)(h+24) = 0$   
 $h = 15 \Rightarrow b = 24$  C

6.  $q = 180 - 48 = 132$  D

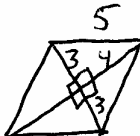
7.  $C = \pi d = 48\pi$   
 $arc = \frac{5 \cdot 180}{360} \cdot \frac{48\pi}{18 \cdot 3} = \frac{40\pi}{3}$  A

8.  $171 = 180 - \frac{360}{n}$   
 $\frac{360}{n} = 9 \Rightarrow n = 40$  A

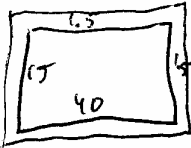
9. Only those in the corners (vertices), There are 8. B


10.   $r = \frac{25}{\sqrt{2}} = \frac{25\sqrt{2}}{2}$   
 $A_c = \pi r^2 = \frac{625\pi}{2}$   
 $A_s = 25^2 = 625$

$\frac{A_s}{A_c} = \frac{625}{\frac{625\pi}{2}} = \frac{2}{\pi} \rightarrow \frac{200}{\pi} \%$  B

11.   $A = 4 \cdot \frac{1}{2} \cdot 3 \cdot 4 = 24$  D

12.  $\frac{3000}{6} \cdot \frac{3900}{6} = 500 \cdot 650 = 325000$  C

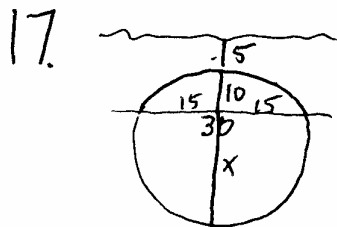
13.   $A_L = 18 \cdot 43 - 15 \cdot 40$   
 $= 774 - 600$   
 $= 174$  A

14.   $A = 50^2 + 4 \cdot 50 \cdot 20 + \pi \cdot 20^2$   
 $= 2500 + 4000 + 400\pi$  C

15.  $\frac{6}{x} = \frac{x}{x+2}$   $x = \frac{6 \pm \sqrt{36 + 48}}{2}$   
 $6x + 12 = x^2$   $\nearrow = 3 \pm \sqrt{21}$  B  
 $0 = x^2 - 6x - 12$

16.  $\frac{x+68}{2} = 42$

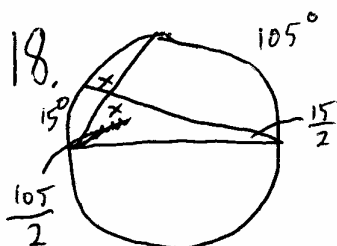
$x+68 = 84 \Rightarrow x = 152$  C



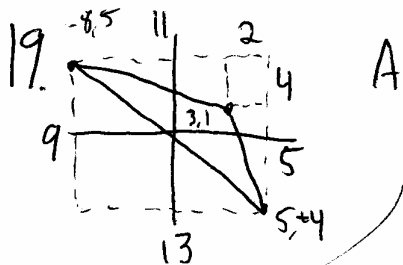
17.  $15 \cdot 15 = x \cdot 10$

$x = \frac{225}{10} = \frac{45}{2}$

$\frac{45}{2} + 15 = \frac{75}{2}$   
 $= 37.5$  A



18.  $x = 180 - \frac{15}{2} - \frac{105}{2}$   
 $= 120$  B

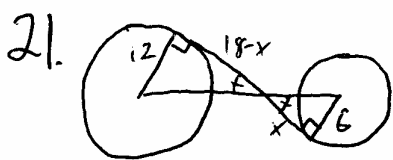


19.  $A = 9 \cdot 13 - 2 \cdot 4$

$-\frac{1}{2}(11 \cdot 4 + 9 \cdot 13 + 5 \cdot 2)$

$A = 117 - 8 - \frac{1}{2}(171)$   
 $= \frac{218}{2} - \frac{171}{2} = \frac{47}{2}$  A

20.  $\frac{\frac{4}{3}\pi \cdot 12^2 \cdot 3}{\pi \cdot 3^2 \cdot 12} = \frac{4}{3}$  A



similar  $\Delta$ 's

$\frac{x}{18-x} = \frac{6}{12}$

$x = 6 \Rightarrow 18\sqrt{2}$  A

22.  $2(x+2)^2 + 2(y+4)^2 = 81 + 8 + 32$

$(x+2)^2 + (y+4)^2 = \frac{121}{2}$

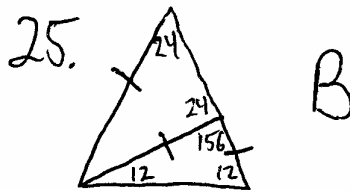
$(-2, -4) \Rightarrow -6$  D

23.  $ab = 18, bc = 15, ac = 30$

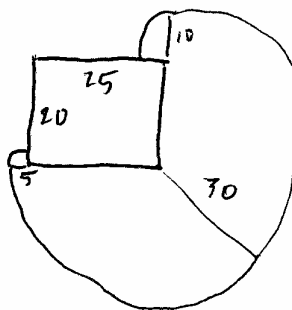
$V = abc = \sqrt{18 \cdot 15 \cdot 30} = 3 \cdot 3 \sqrt{2 \cdot 5 \cdot 10}$   
 $= 90$  B

24.  $V = \frac{4}{3}\pi r^3 = \frac{72}{3}\pi = 24\pi$

$r = 6$   $SA = 4\pi r^2 = 144\pi$  E

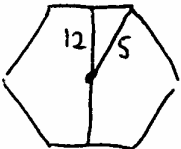


25. B

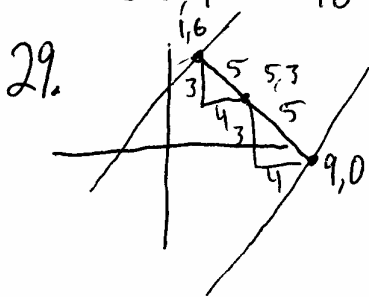


26.  $A = \frac{3}{4}30^2\pi + \frac{2}{4}10^2\pi + \frac{1}{4}5^2\pi$

$\frac{(2700 + 100 + 25)\pi}{4} = \frac{2825\pi}{4}$  B

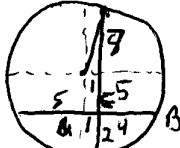
27.   $s = \frac{2 \cdot 12}{\sqrt{3}} = 8\sqrt{3}$   
 $A = 6 \cdot \frac{s^2 \sqrt{3}}{4} = 6 \cdot \frac{64 \cdot 3 \sqrt{3}}{4} = 288\sqrt{3}$  D

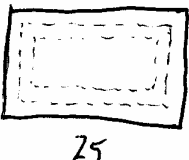
28.  $4s = s^2$   
 $s = 0.4 \Rightarrow 16$  D



$6 = \frac{4}{3} \cdot 1 + b \Rightarrow b = \frac{14}{3}$   
 $0 = \frac{4}{3} \cdot 9 + b \Rightarrow b = -12$   
 $\frac{-22}{3}$  C

30.  $V = 30 \cdot 40 \cdot .01 = 12$   
 $V = \pi r^2 \cdot 30 = 12$   
 $r^2 = \frac{12}{30\pi} = \frac{2}{5\pi}$   
 $r = \sqrt{\frac{2}{5\pi}} \text{ m} = 100 \sqrt{\frac{2}{5\pi}} \text{ cm}$   
 $d = \frac{200 \sqrt{10\pi}}{5\pi} = \frac{40 \sqrt{10\pi}}{\pi}$  D

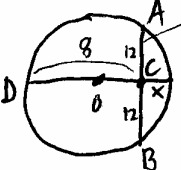
31.   $r = \sqrt{7^2 + 1^2} = \sqrt{50} = 5\sqrt{2}$  C

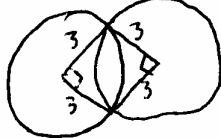
32.  total = 250

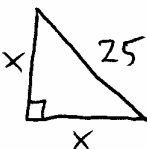
1st pass:  $250 - 8 \cdot 23 = 250 - 184 = 66$

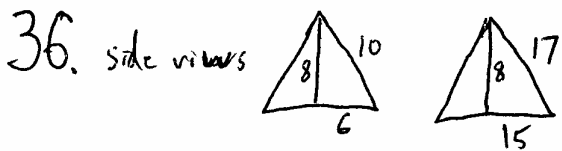
2nd:  $184 - 6 \cdot 21 = 184 - 126 = 58$

3rd pass does it C

33.  I drew it on the wrong side of the center.  
 $x = \frac{12^2}{8} = \frac{144}{8} = 18 \Rightarrow DE = 26$   
 $OE = 13 \Rightarrow OC = 5$  C

34.   
 $A_{\text{sh}} = 2 \left( \pi 3^2 \cdot \frac{1}{4} - \frac{1}{2} \cdot 3 \cdot 3 \right)$   
 $= 2 \left( \frac{9\pi}{4} - \frac{9}{2} \right)$   
 $= \frac{9\pi - 18}{2}$  A

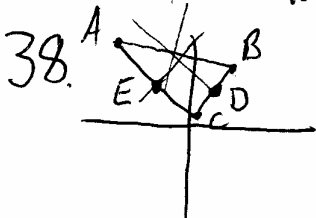
35.   $x = \frac{25}{\sqrt{2}} = \frac{25\sqrt{2}}{2}$  A  
 $P = 2x + 25 = 25\sqrt{2} + 25$



$$SA = 12 \cdot 30 + \frac{1}{2} \cdot 2 \cdot 2 \cdot \frac{1}{2} \cdot 10 \cdot 30 + 2 \cdot \frac{1}{2} \cdot 17 \cdot 12 = 360 + 300 + 204 = 864 \text{ C}$$

37.  $x = \frac{-b}{2a} = \frac{9}{8}$  axis of symmetry

$$y = 4\left(\frac{9}{8}\right)^2 - 9\left(\frac{9}{8}\right) + 7 = \frac{81}{16} - \frac{81}{8} + \frac{112}{16} = \frac{112 - 81}{16} = \frac{31}{16} \text{ B}$$



You could find the intersection of any two  $\perp$  bisectors.

but not like this

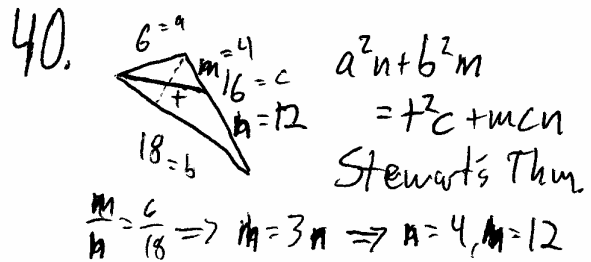
$$D = (3, 5) \quad E = \left(-\frac{9}{2}, \frac{13}{2}\right)$$

$$m = -\frac{1}{2} \quad m = 1$$

$$y = -\frac{1}{2}x + \frac{13}{2} \quad y = x + 11$$

$$0 = \frac{3}{2}x + \frac{9}{2} \Rightarrow x = -3, y = 8 \text{ D}$$

39.  $DE = AC \cdot \frac{\sqrt{2}}{2} = 6 \cdot \frac{\sqrt{2}}{2} = 3\sqrt{2} \text{ B}$



$$6^2 \cdot 12 + 18^2 \cdot 4 = t^2 \cdot 16 + 4 \cdot 16 \cdot 12$$

16  $9 \cdot 3 + 81 = t^2 + 48$

$$60 = t^2 \Rightarrow t = 2\sqrt{15} \text{ A}$$