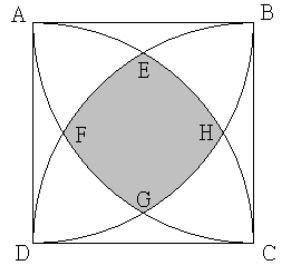

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$ABCD$ I
 AFE AEB $EFGH$ ((?



The Integrator() GSP

Windows Office Excel

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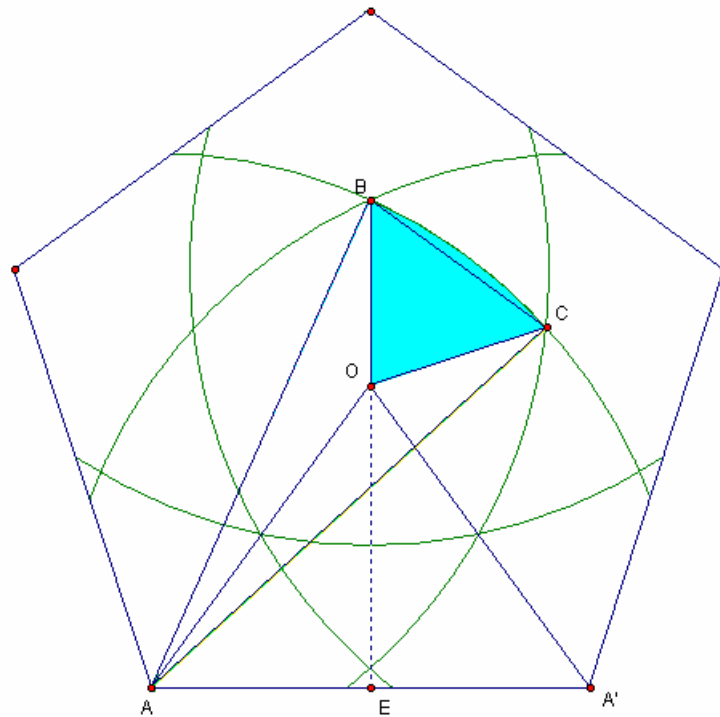
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n n k n n
 ()
 k n $f(k, n)$

()



1. $\overline{OB} \overline{OC}$
2. $\overline{AB} \overline{AC} \quad OBC = \overline{ABC} - 2 \overline{OAB}$
 $1 = \overline{AB} = \overline{AC} = k$
 $= \angle BAE = \cos^{-1} \frac{\overline{AB}}{\overline{AE}} = \cos^{-1} \frac{\frac{1}{2}}{k} = \cos^{-1} \frac{1}{2k}$
 $= \angle OAE = \frac{\pi}{2} - \angle AOE = \frac{\pi}{2} - \frac{1}{2} \angle AOA' = \frac{\pi}{2} - \frac{1}{2} \times \frac{1}{5} \times 2$
 $= \frac{\pi}{2} - \frac{1}{5}$
 $= \angle BAO = -$
3. \overline{OAB}
 $\overline{OAB} = \frac{1}{2} \overline{AB} \overline{AO} \sin = \frac{1}{2} k \overline{AE} \sec \sin = \frac{1}{4} k \sec \sin \quad (\overline{AE} = \frac{1}{2})$
4. $\overline{ABC} \quad \overline{ABC} = \frac{1}{2} r^2 = \frac{1}{2} k^2 2$

5. 3.4. OBC

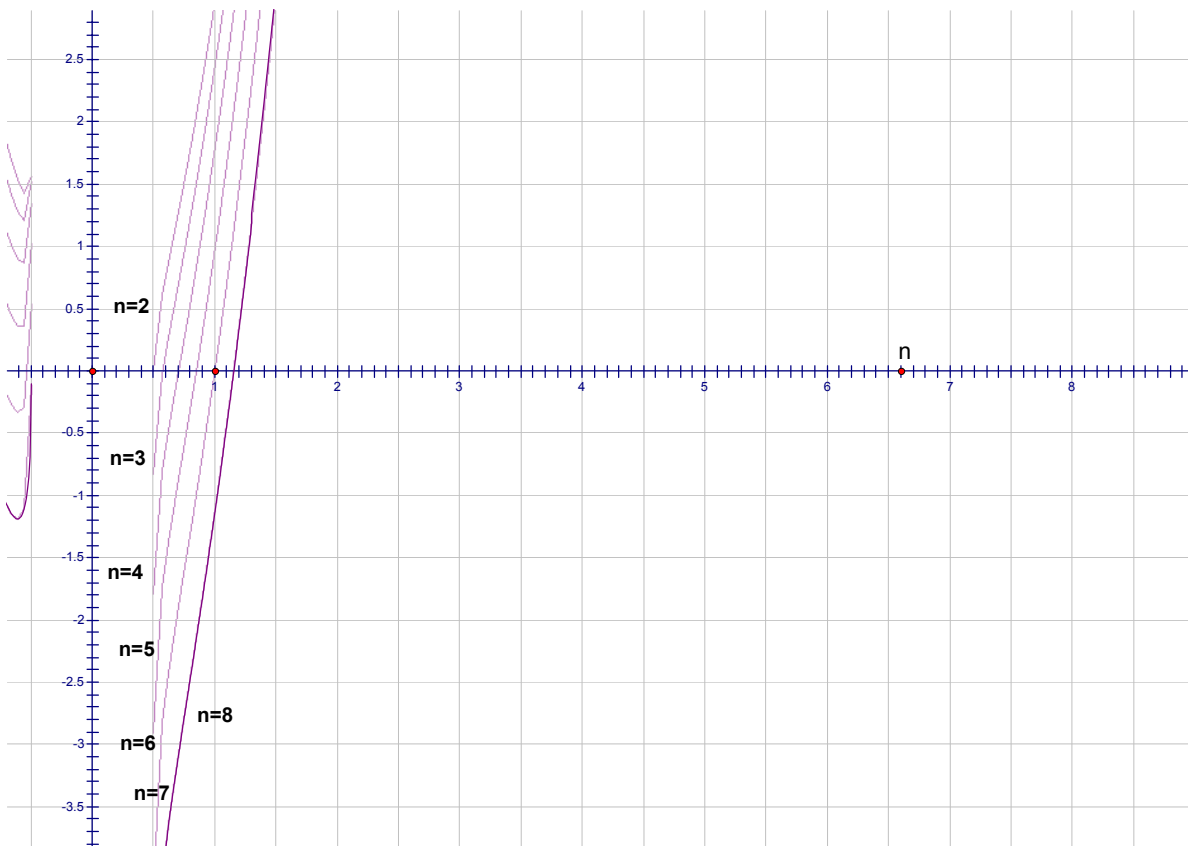
$$\begin{aligned} \text{OBC} &= \text{ABC} - 2 \text{OAB} \\ &= \left(\frac{1}{2} k^2 2\right) - 2\left(\frac{1}{4} k \sec \sin\right) = k^2 - \frac{k \sec \sin}{2} \end{aligned}$$

6. $= 5 \text{OBC} = 5\left(k^2 - \frac{k \sec \sin}{2}\right)$

$$\begin{aligned} & k \quad n \\ & n\left(k^2 - \frac{k \sec \sin}{2}\right) \\ & = - \quad = \cos^{-1} \frac{1}{2k} = \frac{\pi}{2} - \frac{\pi}{n} \end{aligned}$$

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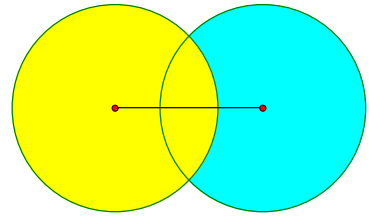
1.



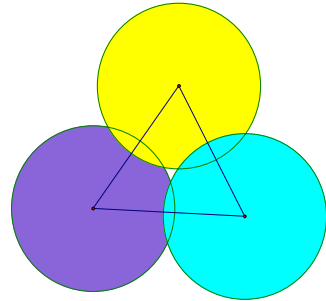
2.

$$(1) \quad n=6 \quad k \quad (1,0) \quad 0$$

(2) $n=2$



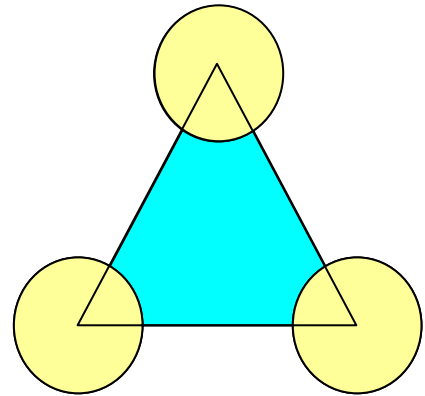
(3) n



(4) $k > 0, \frac{1}{2}$,
 n

$\frac{1}{2}$

$k > 0$
 n



(5) k

a. $k > -\frac{1}{2}, 0$

b. y

n

y

c. $k < -\frac{1}{2}$

k

$k < -\frac{1}{2}$

()

n

n

(

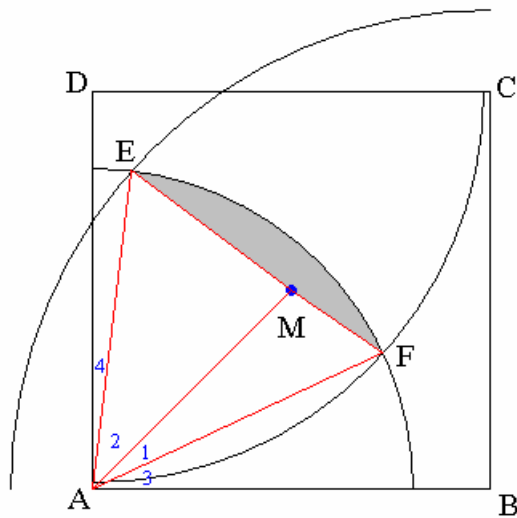
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n

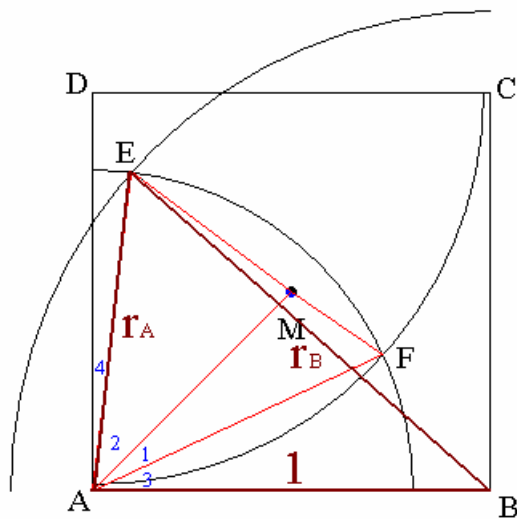
n

n

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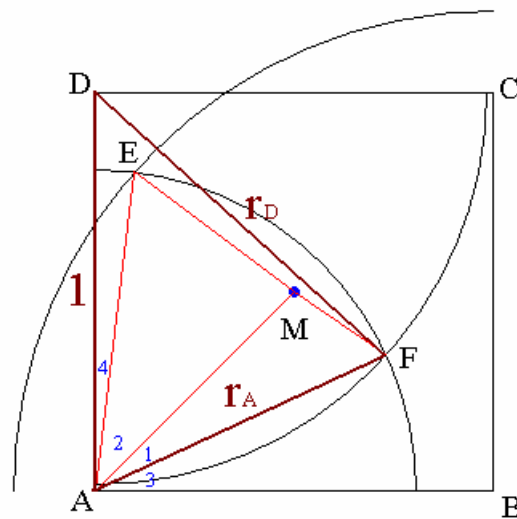


EMF		
	ABCD	M
A	r_A	
B	r_B	
D	r_D	
E F		
AMF =	1	AME = 2
FAB =	3	EAD = 4
	$1 + 3 =$	$2 + 4 = 45^\circ$
	$45^\circ = \frac{\delta}{2}$	($\delta =$)



$$1 + 2 + 3 = \cos^{-1} \frac{1+r_A^2-r_B^2}{2 r_A}$$

ABE



$$1 + 2 + 4 = \cos^{-1} \frac{1+r_A^2-r_D^2}{2 r_A}$$

AFD

$$(r_H, r_K) = \cos^{-1} \frac{1+r_H^2-r_K^2}{2 r_H} \quad (HK)$$

$$\Rightarrow 1 + 2 + 3 = (r_A, r_B) \quad 1 + 2 + 4 = (r_A, r_D)$$

$$1 = (r_A, r_D) - \frac{\quad}{4} \quad 2 = (r_A, r_B) - \frac{\quad}{4} \quad \left(\frac{\quad}{4} = \frac{\delta}{2}\right)$$

$$\Rightarrow 1 + 2 = (r_A, r_D) + (r_A, r_B) - \frac{\quad}{2} \quad \left(\frac{\quad}{2} = \delta\right)$$

$$\text{EMF (AEF - AME - AMF)}$$

$$= r_A \left[\frac{AD}{r_A} + \frac{AB}{r_A} - \frac{\quad}{2} \right] - \frac{1}{2} \times \frac{\sqrt{2}}{2} r_A [\sin(\frac{AD}{r_A} - \frac{\quad}{4}) + \sin(\frac{AB}{r_A} - \frac{\quad}{4})] \quad \left(\frac{\sqrt{2}}{2} = \frac{1}{2} \sec \frac{\delta}{2}\right)$$

$$= r_A \left[\frac{AD}{r_A} + \frac{AB}{r_A} - \frac{\quad}{2} \right] - \frac{\sqrt{2}}{4} r_A [\sin \frac{AD}{r_A} - \cos \frac{AD}{r_A} + \sin \frac{AB}{r_A} - \cos \frac{AB}{r_A}] \quad (\quad)$$

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$$\sum_{i=1}^n r_{P_i} \left[r_{P_{i+1}} + r_{P_{i-1}-\delta} \right] - \frac{1}{2} \times \frac{1}{2} \sec \frac{\delta}{2} r_{P_i} \left[\sin \left(P_{i+1} - \frac{\delta}{2} \right) + \sin \left(P_{i-1} - \frac{\delta}{2} \right) \right]$$

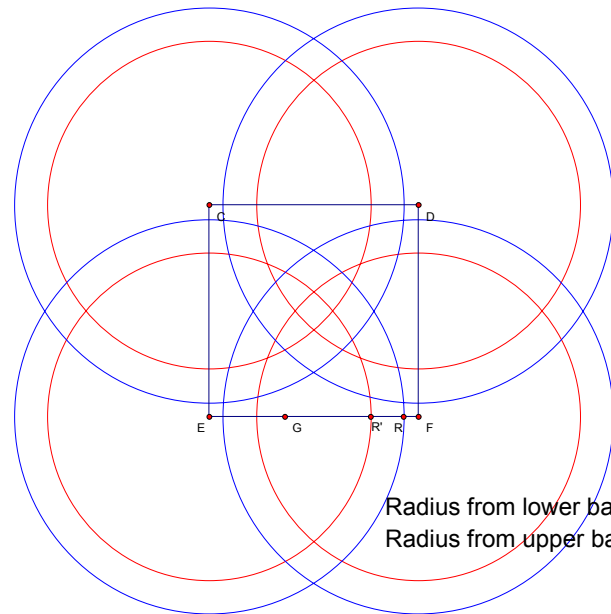
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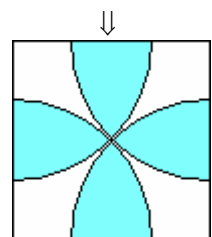
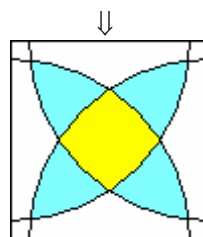
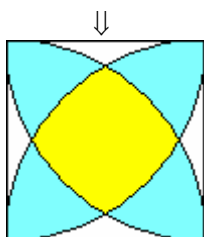
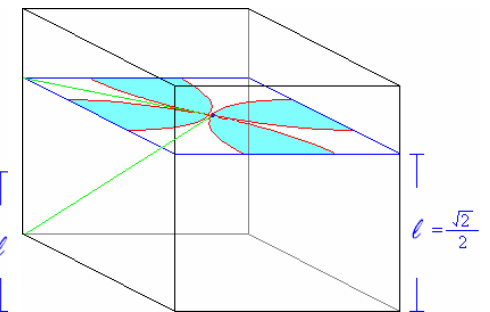
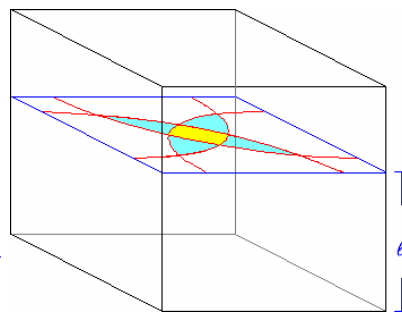
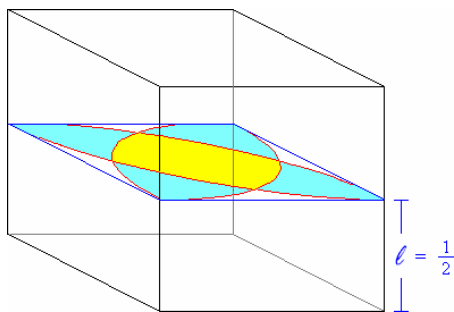
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1.

(1)



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()



$$(2) \quad \left(\frac{1}{2} \right) \quad 1 \left(\frac{1}{2} \right)$$

$$(3) \quad l = \frac{1}{2} \quad k^2 = 1^2 - l^2 \quad \left(\frac{\sqrt{2}}{2} \right) \quad k = \frac{\sqrt{2}}{2}$$

$$l = \frac{\sqrt{2}}{2} \quad h$$

$$(4) \quad 2 \quad 2 \times \int_{\frac{1}{2}}^h d l$$

2.

$$2 \times \int_{\frac{1}{2}}^h n \left(k^2 r - \frac{k \sec \sin}{2} \right) d l \quad \left(\frac{1}{2} \right)$$

$$k = \sqrt{1 - l^2} \quad n = 4 \quad r = 1$$

$$= \cos^{-1} \frac{1}{2k} = \frac{\pi}{2} - \frac{\pi}{n} = \frac{\pi}{4} = - = \cos^{-1} \frac{1}{2k} - \frac{\pi}{4}$$

$$2 \times \int_{\frac{1}{2}}^h n \left(k^2 r - \frac{k \sec \sin}{2} \right) d l$$

$$= 2 \int_{\frac{1}{2}}^h 4 \left[(1 - l^2) \left(\cos^{-1} \frac{1}{2\sqrt{1-l^2}} - \frac{\pi}{4} \right) - \frac{\sqrt{1-l^2} \sqrt{2} \sin \left(\frac{1}{2\sqrt{1-l^2}} - \frac{\pi}{4} \right)}{2} \right] d l$$

$$= 2 \times \int_{\frac{1}{2}}^h 4 \left[(1 - l^2) \left(\cos^{-1} \frac{1}{2\sqrt{1-l^2}} - \frac{\pi}{4} \right) - \frac{\sqrt{1-l^2} \left[\sin \cos^{-1} \left(\frac{1}{2\sqrt{1-l^2}} \right) - \frac{1}{2\sqrt{1-l^2}} \right]}{2} \right] d l$$

$$= 8 \times \int_{\frac{1}{2}}^h \left[(1 - l^2) \cos^{-1} \frac{1}{2\sqrt{1-l^2}} - (1 - l^2) \times \frac{\pi}{4} - \frac{\sqrt{3-4l^2}-1}{4} \right] d l$$

$$= \frac{1}{6} \left\{ \frac{8 l^3}{\sqrt{3-4l^2}} - 16 l (l^2-3) \cos^{-1} \frac{1}{2\sqrt{1-l^2}} - \frac{6 l}{\sqrt{3-4l^2}} \right.$$

$$\left. + 32 \tan^{-1} \frac{1}{\sqrt{3-4l^2}} - 13 \tan^{-1} \frac{2 l}{\sqrt{3-4l^2}} \right\} - 2 \times \left(l - \frac{1}{3} l^3 \right) - \left\{ l \sqrt{3-4l^2} + \frac{3}{2} \sin^{-1} \frac{2 l}{\sqrt{3}} \right\} + 2 l$$

$$\sqrt{1-h^2} = \frac{\sqrt{2}}{2} \quad h = \frac{\sqrt{2}}{2} \quad \left| \frac{1}{2} \right.$$

$$= \frac{65}{12} - \frac{49}{3} \tan^{-1} \sqrt{2} - \frac{16}{3} \sin^{-1} \frac{1}{3} + \sqrt{2} - 1 = 0.0152054895288$$

$$\sqrt{2}-1$$

$$\frac{1}{6} \times (\sqrt{2}-1)^3 = 0.0118446353109$$

$$f(k, n) = n \left(k^2 + \frac{k \sec \sin}{2} \right)$$

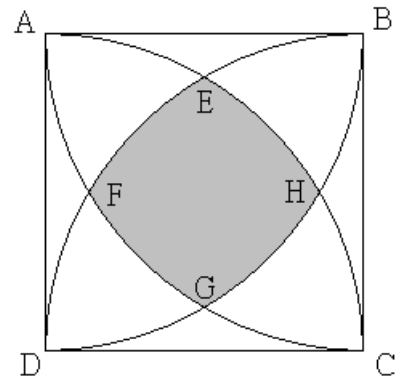
$$= \cos^{-1} \frac{1}{2k} = \frac{\pi}{2} - \frac{1}{n}$$

$$\sum_{i=1}^n \Gamma_{P_i} \left[\Gamma_{P_{i+1}} + \Gamma_{P_{i-1}-\delta} \right] - \frac{1}{4} \sec \frac{\delta}{2} \times \Gamma_{P_i} \left[\sin \left(\Gamma_{P_{i+1}} - \frac{\delta}{2} \right) + \sin \left(\Gamma_{P_{i-1}} - \frac{\delta}{2} \right) \right]$$

$$2 \times \int_{\frac{1}{2}}^h n \left(k^2 r - \frac{k \sec \sin}{2} \right) dl \quad (\delta)$$

1

$EFGH$ X, AEF Y, ABE Z



BED DGB (a) $= X+2Y = \frac{\pi}{2} - 1 \dots\dots$

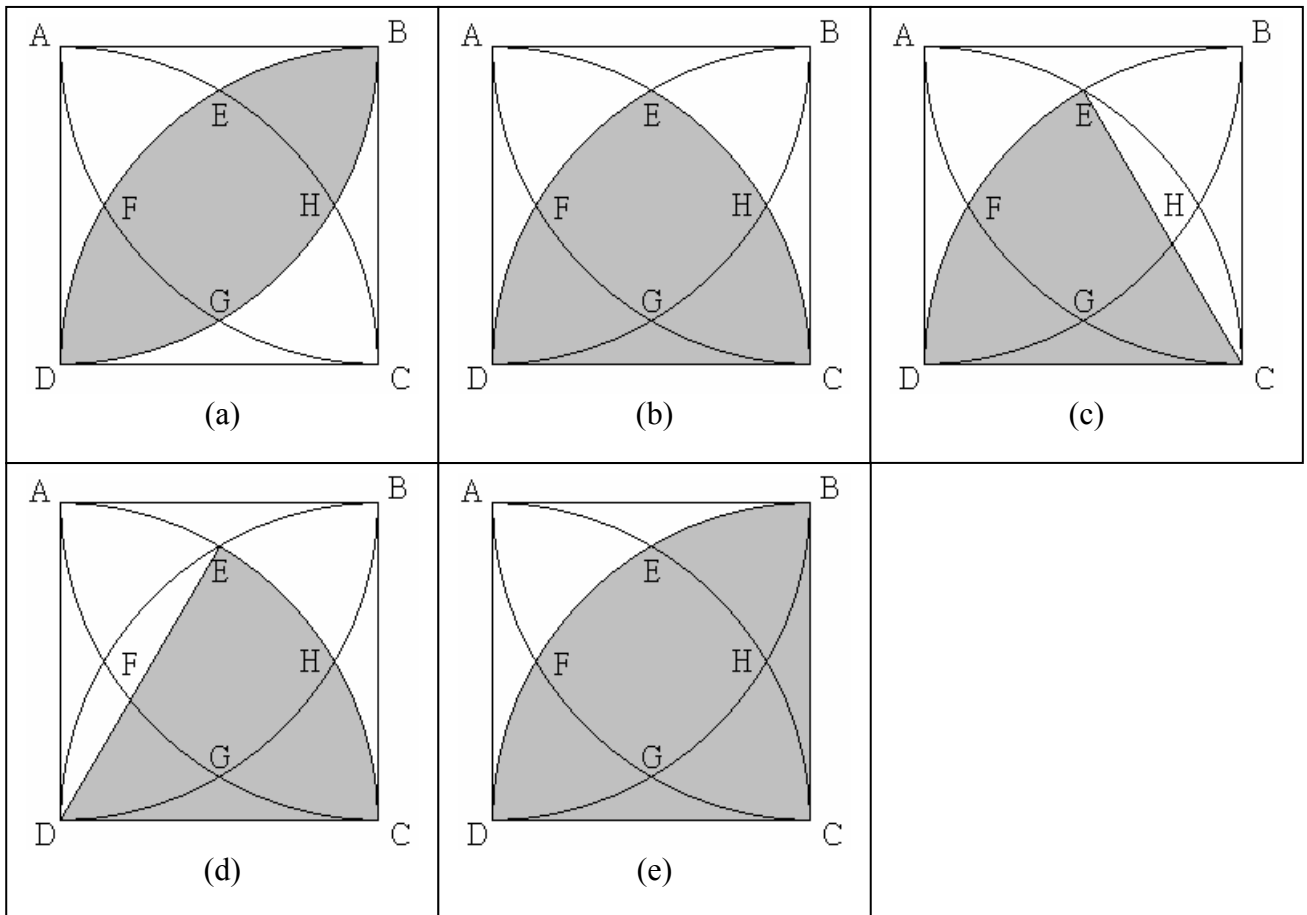
BDC (e) $= X+3Y+2Z = \frac{\pi}{4} \dots\dots$

DEC (b) = $ECD(c) + EDC(d) - EDC =$
 $= X+2Y+Z = \frac{\pi}{6} + \frac{\pi}{6} - \frac{\sqrt{3}}{4} \dots\dots$

$\Rightarrow Z = (\frac{\pi}{6} + \frac{\pi}{6} - \frac{\sqrt{3}}{4}) - (\frac{\pi}{2} - 1) = 1 - \frac{\sqrt{3}}{4} - \frac{\pi}{6}$

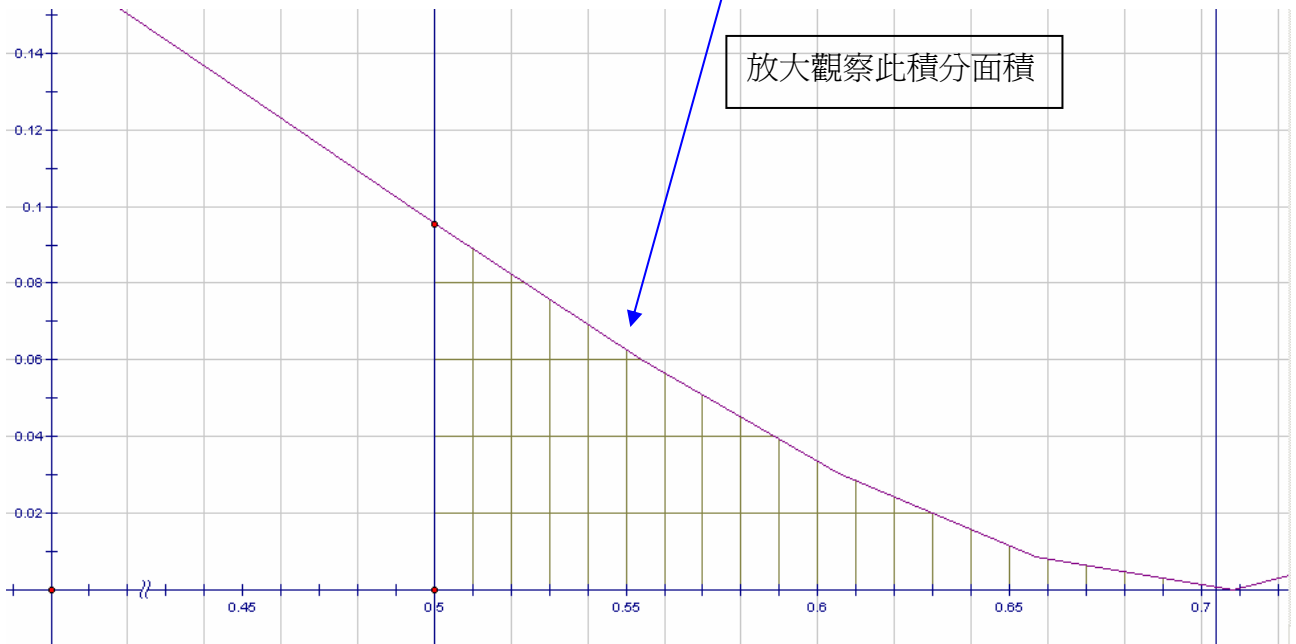
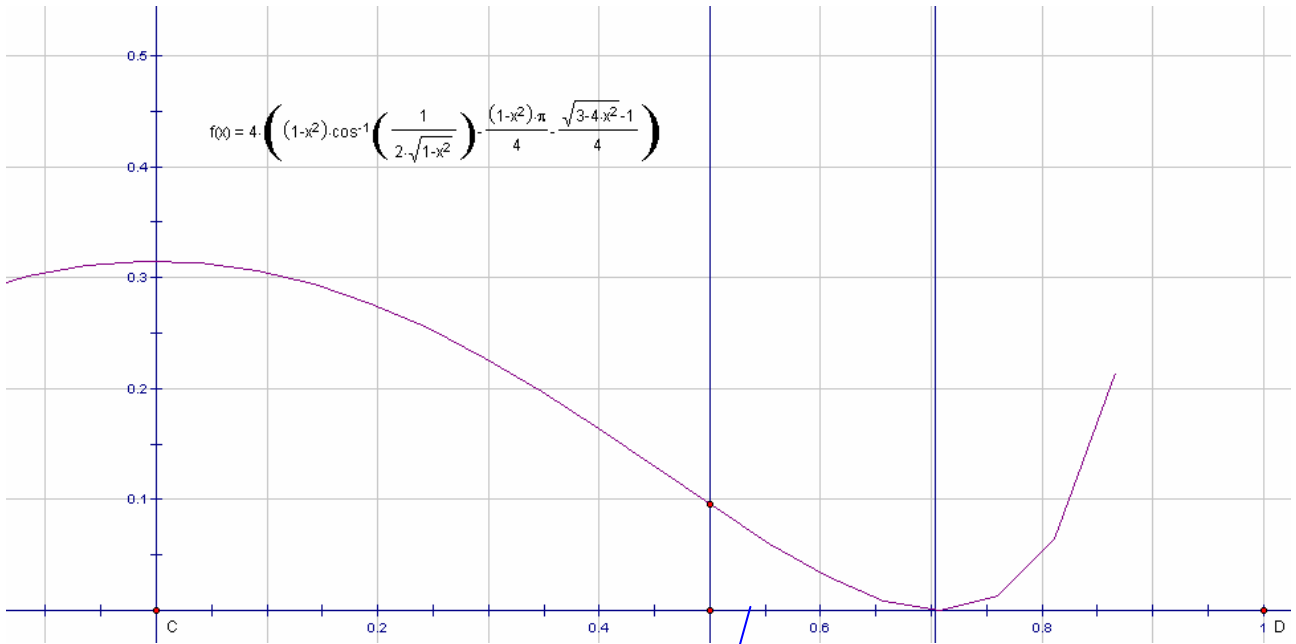
$\Rightarrow X+3Y = \frac{\pi}{4} - 2 \times (1 - \frac{\sqrt{3}}{4} - \frac{\pi}{6}) = \frac{7\pi}{12} + \frac{\sqrt{3}}{2} - 2 \dots\dots$

$\Rightarrow X = \frac{\pi}{12} - \frac{\sqrt{3}}{2} + 1 \Rightarrow Y = \frac{5\pi}{12} - \frac{\sqrt{3}}{2}$



2

$$f(x) = n(k^2 r - \frac{k \sec \sin}{2}) \quad (\quad)$$



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1.

2.

3.