If mean score on favorable 1 est. = 50

" " " 2 est.

First X, Sec Y

If $X > \frac{5}{?}$ do X X

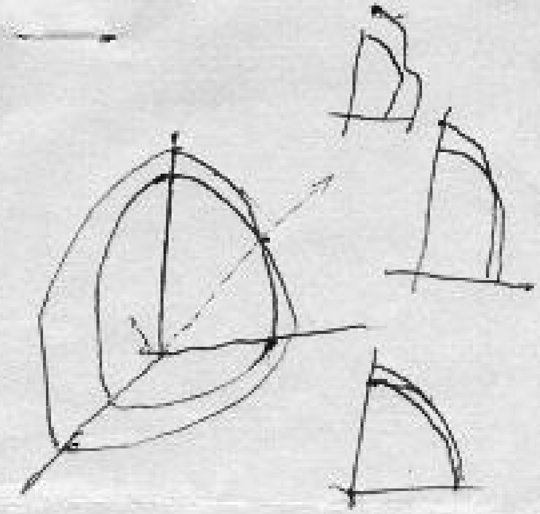
else X Y

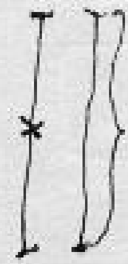
50 ∴ ~~25 ...~~

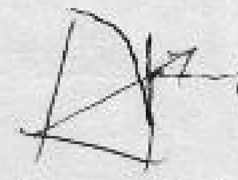
$\int_{\xi}^{1} 2x\,dx + \int_0^{\xi}\int_0^{1}(x+y)\,dx\,dy$

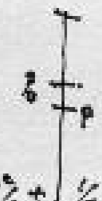
$1 - \xi^2 + \xi^2/2 + \xi/2$

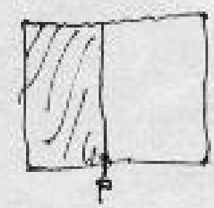
$1 + \frac{\xi}{2} - \frac{\xi^2}{2}$ $\quad \xi = 1/2 \quad 1\frac{1}{8}$











$p_0 > 1/2$

\# p is P_0 ~~If $P < P_0$ try X: if $X < P$~~

If $P < P_0$ try X: if $X < P$ then if $P < 50\%$ try Y $\quad Y + X \quad = \frac{P^2}{2} + \frac{1}{2}$

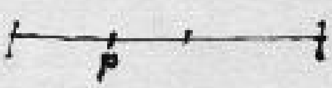
if $X < P$ and if $P > 50\%$ do P $\quad X + P$

if $X > P$ and $X < 50\%$ try Y $\quad X + Y$

and $X > 50\%$ try X $\quad 2X$

If $P > P_0$ do $P + P$

If X is



1. If $P > P_0$ $\quad 2P \qquad 2P$

2. If $P_0 > P > 1/2$ try X. If $X > P$ score $2X \qquad 1 - P^2 \quad 1 + P^2/2$

If $X < P$ score ~~2P~~ $X + P \qquad \frac{P^2}{2} + P^2$

3. If $\frac{1}{2} > P$ try X $\quad$ If $X < \frac{1}{2}$ try Y score $X + Y$ at $1/8 + \frac{1}{4}$

If $X > 1/2$ score $2X$ at $(1 - \frac{1}{4})$ $\quad = 9/8$

~~If $\frac{1}{2}$ ... $P < X < \frac{1}{2}$ try Y score~~

$1 + P_0^2/2 - 2P_0 = 0$

~~$\frac{1 \pm \sqrt{...}}{2}$~~

$2 \pm \sqrt{4 - 2} = .586$

$P_0 = 2 - \sqrt{2} \qquad P_0^2 = 6 - 4\sqrt{2} \qquad 4 - 2\sqrt{2}$

$2P_0 = 1.172 = 1 + \frac{P_0^2}{2}$

∴ If $P < 1/2$ X, if $X < 1/2$, Y
else X

If $.586 > P > .500$ X: if $X > P$: X X
: if $X < P$: P

If $P > .586 \qquad P \qquad P$

n remain

If $p > p_n$ then replace p np

If $p_{n-1} < p < p_n$ only way to lose is try x if $x > p$ replace x nx $\frac{n}{2}(1-p^2)$
if $x < p$ replace p $x + (n-1)p$ $\frac{1}{2}p^2 + n(n-1)p^2$

$\frac{n}{2} + \frac{n-1}{2} p_n^2 = n p_n$

$\frac{n}{2} + \frac{n-1}{2} p^2$

$\frac{n}{2(n-1)} \pm \sqrt{\frac{n^2}{(n-1)^2} - \frac{n}{n-1}}$

$p_n = \frac{n - \sqrt{n}}{n-1} = \boxed{\frac{\sqrt{n}}{\sqrt{n}+1} = p_n}$

$n=10$
$\frac{9.16}{6.84} = \frac{}{9} = .76 = p_{10}$

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below chance .80 loses .40 Eff loss $.80 \times .40 = .32$

.80. above chance .20 gains .10 Eff gain $.02 \times n$

$n=16$

p below ch p loses $p/2$ Eff $p^2/2$ n

above ch $1-p$ " gain $\frac{1-p}{2}$ Eff $\frac{1-p^2}{2}$ n

0 set $n = \frac{p^2}{(1-p)^2}$ $\sqrt{n} = \frac{p}{1-p}$