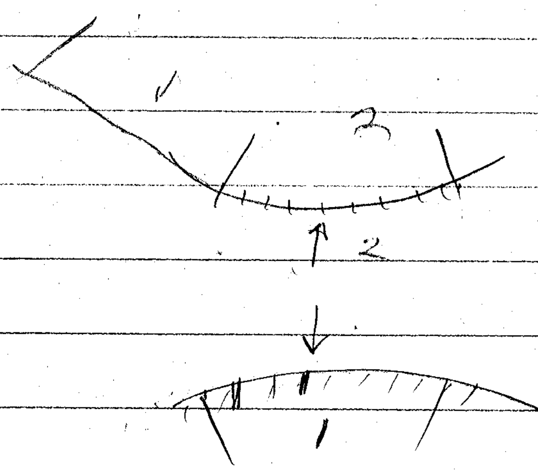
Scatter Read

2 control words

1. has interrupt

2.

Note: fetching a new control word — skips a word of data
write a zero on scatter write



		A	r
	H	30	20
δ	N	4	20

$$\delta = 1 - \frac{20 \cdot 1}{30} = 0.33$$

$$\delta = 1 - \frac{20 \cdot}{4}$$

% time waiting for sync.

coupled $t_c \leq t_p$ $\quad t_p = t_c(1-\delta)$

decoupled $t_c > t_p$ $\quad t_p = t_D(\eta) = \Delta t_D \cdot n_I \, \eta$

↑ factor

$$n_c \Delta t_c (1-\delta) = n_I \Delta t_D \, \eta$$

$$\left(\frac{n_c}{n_I}\right)(1-\delta) = \left(\frac{\Delta t_D}{\Delta t_c}\right)\eta$$

$$A(1-\delta) = r\eta$$

$$1-\delta = \frac{r\eta}{A}$$

$$\delta = 1 - \frac{r\eta}{A}$$

$$\eta = \frac{A}{r}$$

$$\eta = \frac{30}{20} = 1.33\ldots$$

$$\eta = \frac{4}{20} = 0.4$$

$$\frac{1-\delta}{\eta} = \frac{r}{A}$$

$$\frac{1+\eta}{1-\delta} = \frac{A}{r} \quad - \begin{cases} 1,33 \\ 0,4 \end{cases}$$

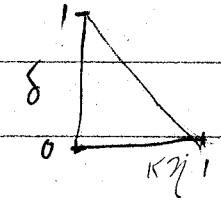
$$\frac{r}{A}\eta = 1-|\delta|$$

$$\frac{(r\eta)}{A}$$

$$\frac{20}{30} \cdot \left(\frac{3}{2}\right) \qquad (r\eta) \qquad r(1+|\eta|)$$

OK S $\quad No\ pts = \frac{S}{n_{ex}\eta}$ $\qquad \delta = 1-K\cdot\eta$

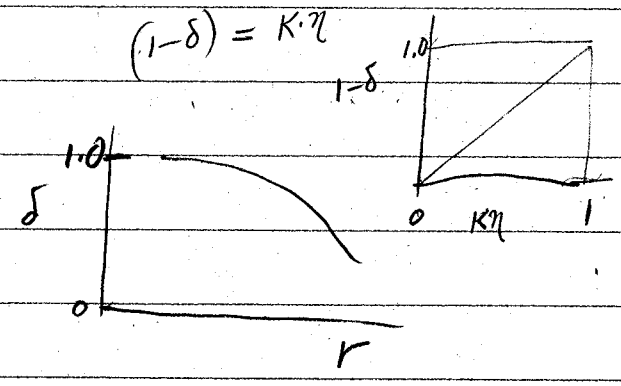
$$K = \frac{r}{A} \qquad H: \ K = \frac{20}{30} = 0,66 \qquad W: \ K = \frac{20}{4} = 5,0$$



$$n_c \Delta t_c (1-\delta) = n_t \Delta t_b \eta \qquad (1-\delta) = K\cdot\eta$$

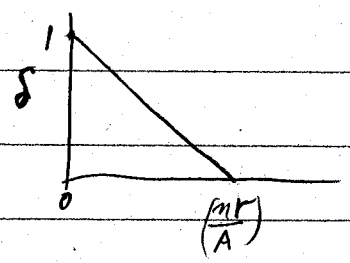
$$\boxed{A(1-\delta) = r\eta}$$

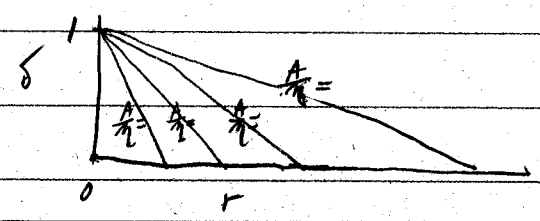
$$A\left(\frac{1-\delta}{\eta}\right) = r$$

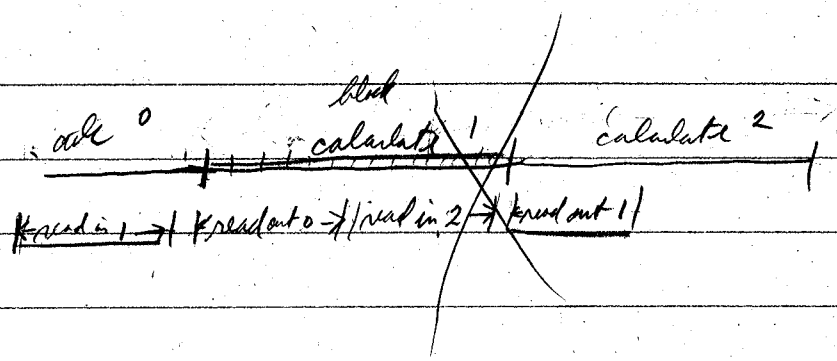


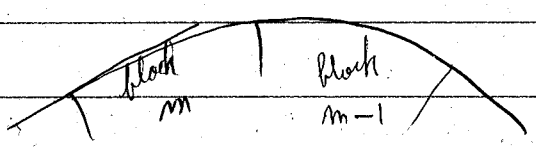
$$1-\delta = \left(\frac{\eta r}{A}\right)$$

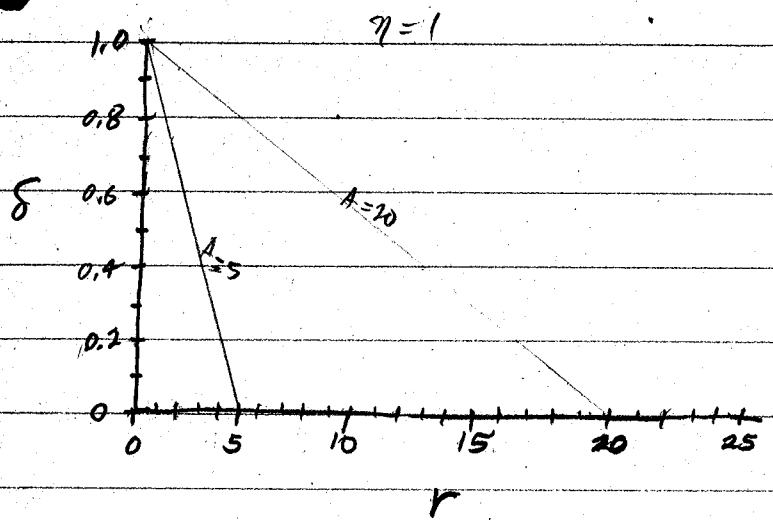
$$\delta = 1-\left(\frac{\eta r}{A}\right)$$

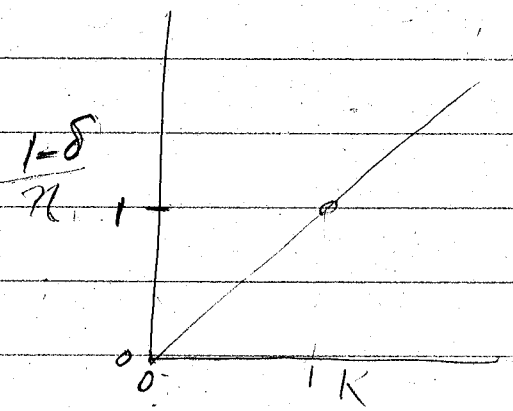





add 0
block
calculate 1
calculate 2
read in 1
read out 0
read in 2
read out 1


block
m
block
m-1





GO

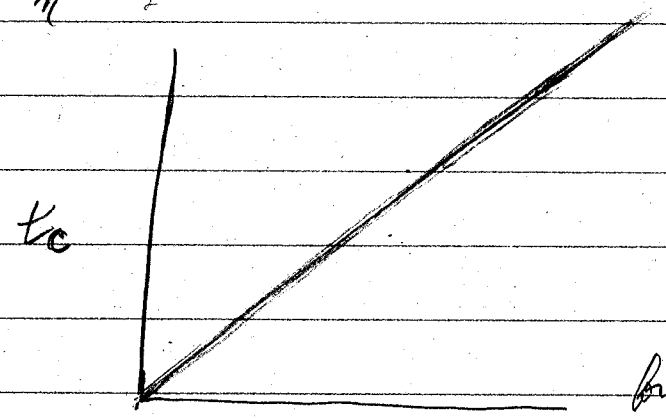
$\frac{A}{\eta} = 5$

$\frac{A}{\eta} = \frac{30}{2}$ is

$\frac{\eta}{A} r = 1$ intercept

$r_c = \frac{A}{\eta}$

II



$t_p = \Delta t_c (1-\delta) n_c$

$t_D = \Delta t_D (\eta\ n_I)$

for long calc: $t_c > t_D$

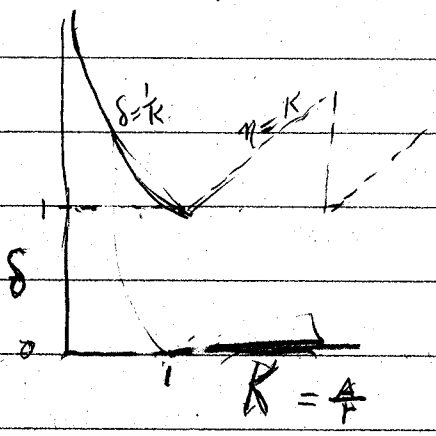
$t_p = t_c = \Delta t_c (1-\delta) n_c$ ($\delta \approx 0$)

$t_p = t_D = \Delta t_D (\eta\ n_I)$ (η large)

i.e. $\Delta t_c n_c = \Delta t_D\ \eta\ n_I$

$A = r\eta$ or $\eta = K$

$K = \frac{A}{r} = \frac{\Delta t_c n_c}{\Delta t_D n_I}$



Short calc: $t_c < t_D$

$t_p = t_D = \Delta t_D \cdot 1;\ n_I$

$t_p = t_c = \Delta t_c (\delta)\ n_c$ (δ large)

$\delta = \frac{1}{K}$

$\Delta t_c (\delta) n_c = \Delta t_D n_I$

$A(\delta) = r$