

$$y = a \log \left(\frac{A_3}{z^2} + C_1 \right) + b$$

$$-6 = a \log \{ 1.511 + C_1 \} + b$$

$$-2 = a \log \{ 21.53 + C_1 \} + b$$

$$1 = a \log \{ 50.06 + C_1 \} + b$$

$$b = -a \log \{ 38.98 + C_1 \}$$

$$-6 = a \log \frac{(1.511 + C_1)}{(38.98 + C_1)}$$

$$1 = a \log \left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\}$$

$$-6 = \log \left\{ \frac{1.511 + C_1}{38.98 + C_1} \right\} / \log \left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\}$$

$$-6 \log \left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\} = \log \left\{ \frac{1.511 + C_1}{38.98 + C_1} \right\}$$

$$\log \left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\}^{-6} = \log \left\{ \frac{1.511 + C_1}{38.98 + C_1} \right\}$$

$$\left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\}^{-6} = \left\{ \frac{1.511 + C_1}{38.98 + C_1} \right\}$$

$$1.511 + C_1 = \frac{(38.98 + C_1)^5}{(50.06 + C_1)^6}$$

$$C_1 = -1.51 + \frac{(38.98)^5}{(50.06)^6} \left\{ \frac{\left(1 + \frac{C_1}{38.98}\right)^5}{\left(1 + \frac{C_1}{50.06}\right)^6} \right\}$$

$$-1 = a \log \left\{ \frac{29.65 + C_1}{38.98 + C_1} \right\}$$

$$1 = a \log \left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\}$$

$$\frac{38.98 + C_1}{29.65 + C_1} = \frac{50.06 + C_1}{38.98 + C_1}$$

$$(38.98 + C_1)^2 = (50.06 + C_1)(29.65 + C_1)$$

$$1519.4 + 77.96 C_1 = 1484.279 + 79.71 C_1$$

$$C_1 = \frac{1519.4 - 1484.279}{79.71 - 77.96} = \boxed{20.07}$$

$$a = 1 / \log \left\{ \frac{50.06 + C_1}{38.98 + C_1} \right\} = 13.39$$

$$b = 23.717$$

$$\gamma = 13.39 \log \left\{ \frac{A3}{Z2} + 20.07 \right\} - 23.717$$

$$\frac{A3}{Z2} = 10 \implies \gamma =$$

$$\text{try } \gamma = 13.39 \log \left[\frac{A3}{Z2} + 21 \right] - 23.717$$

$$\left[\frac{\gamma + 23.717}{13.39} \right] = \log_{10} \left[\frac{A3}{Z2} + 21 \right]$$

$$\frac{\gamma + 23.717}{13.39} = \log_{10} e \cdot \log_e \left(\frac{A3}{Z2} + 21 \right)$$

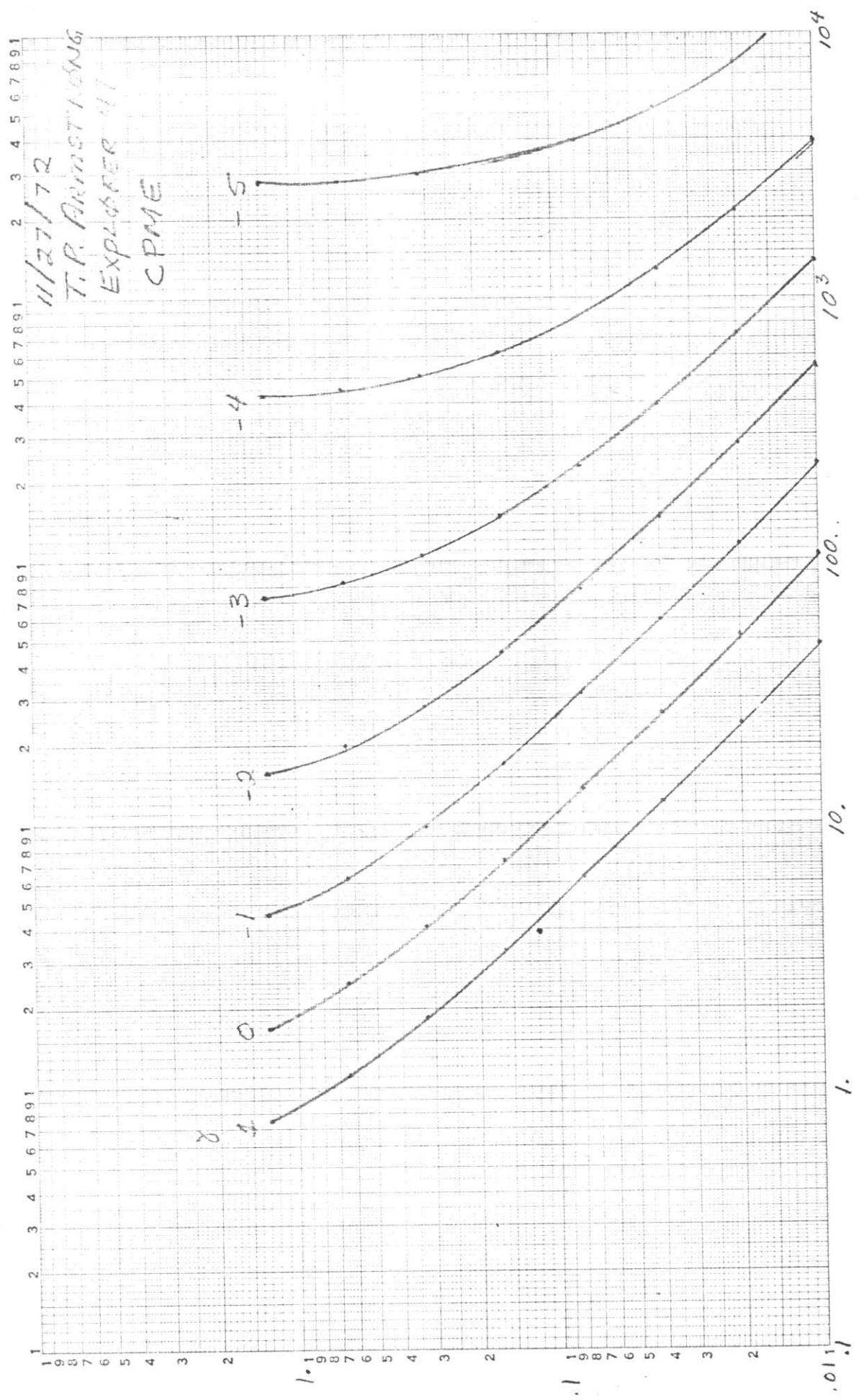
$$\ln \left(\frac{A3}{Z2} + 21 \right) = \frac{\gamma + 23.717}{13.39 \log_{10} e}$$

$$\frac{A3}{Z2} = \exp \left\{ \frac{\gamma + 23.717}{13.39 \log_{10} e} \right\} - 21$$

$$\frac{A3}{Z2} = \exp \left\{ \frac{\gamma + 23.717}{5.8152} \right\} - 21$$

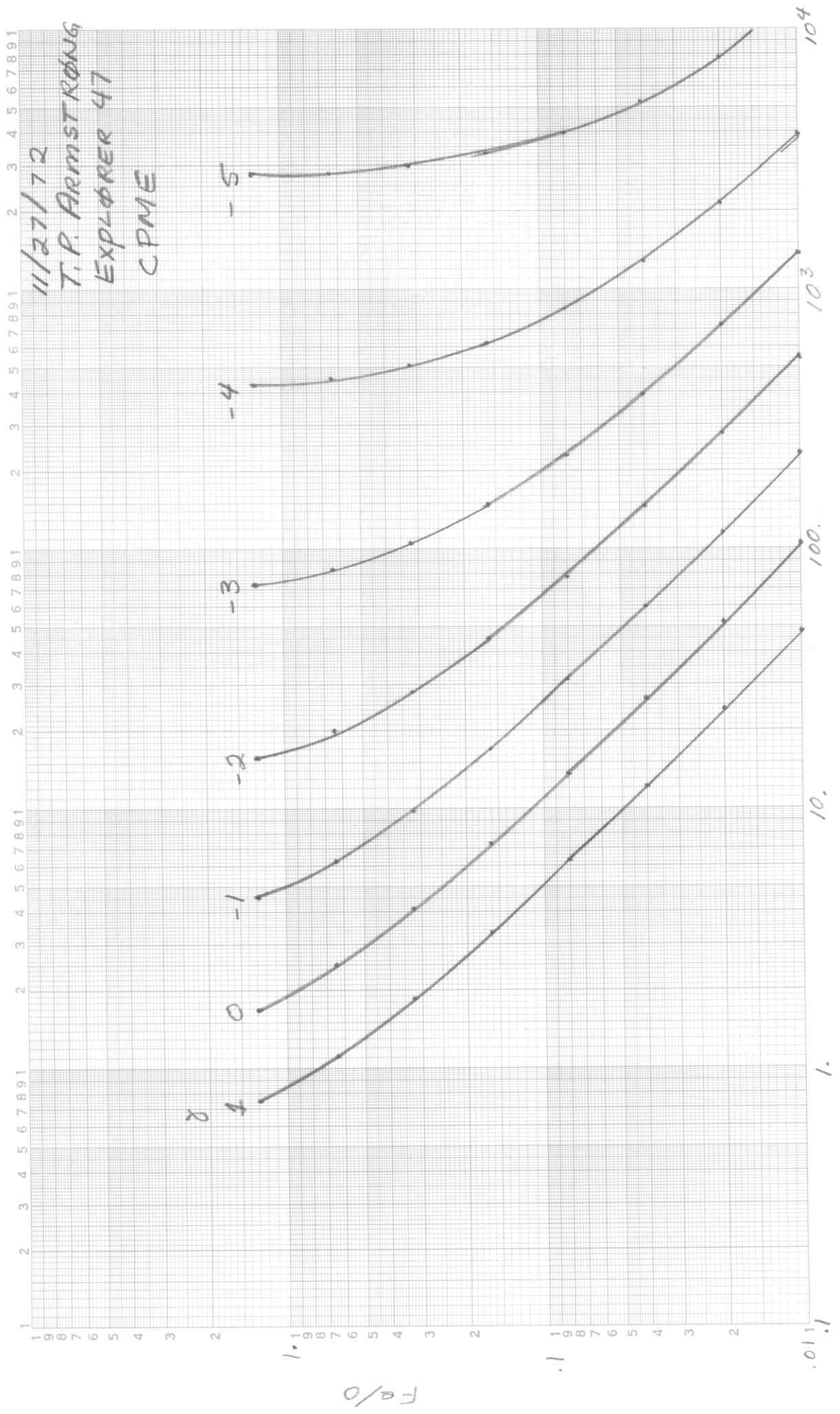
$$\frac{\alpha}{0} = \frac{A3}{Z2} \cdot \left[\frac{60}{\exp\left\{\frac{\gamma + 23.717}{5.8152}\right\} - 21} \right]$$

γ	%
-4	57
-2	62
0	61.4
-5	59.3



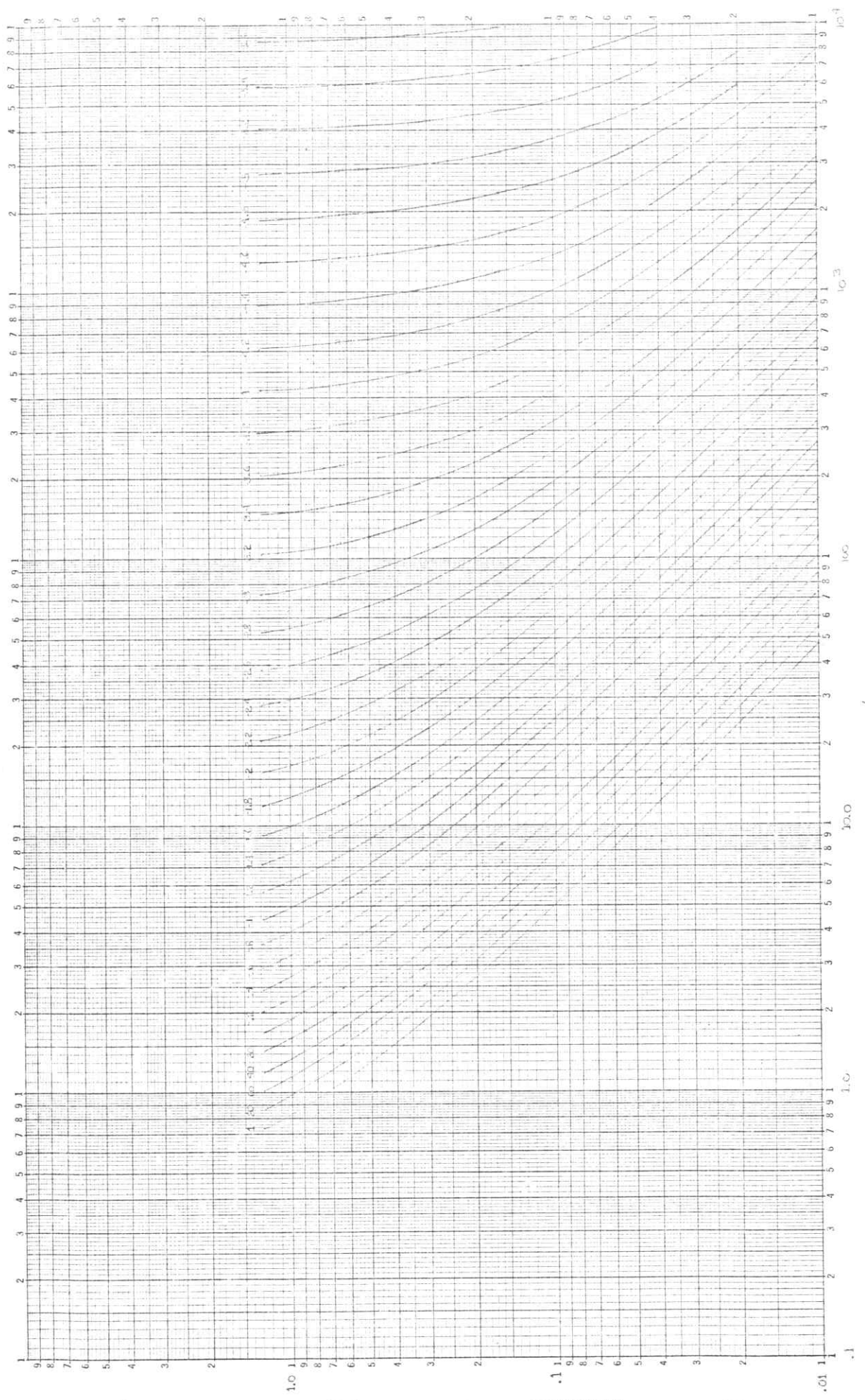
Z2/Z3

50/0



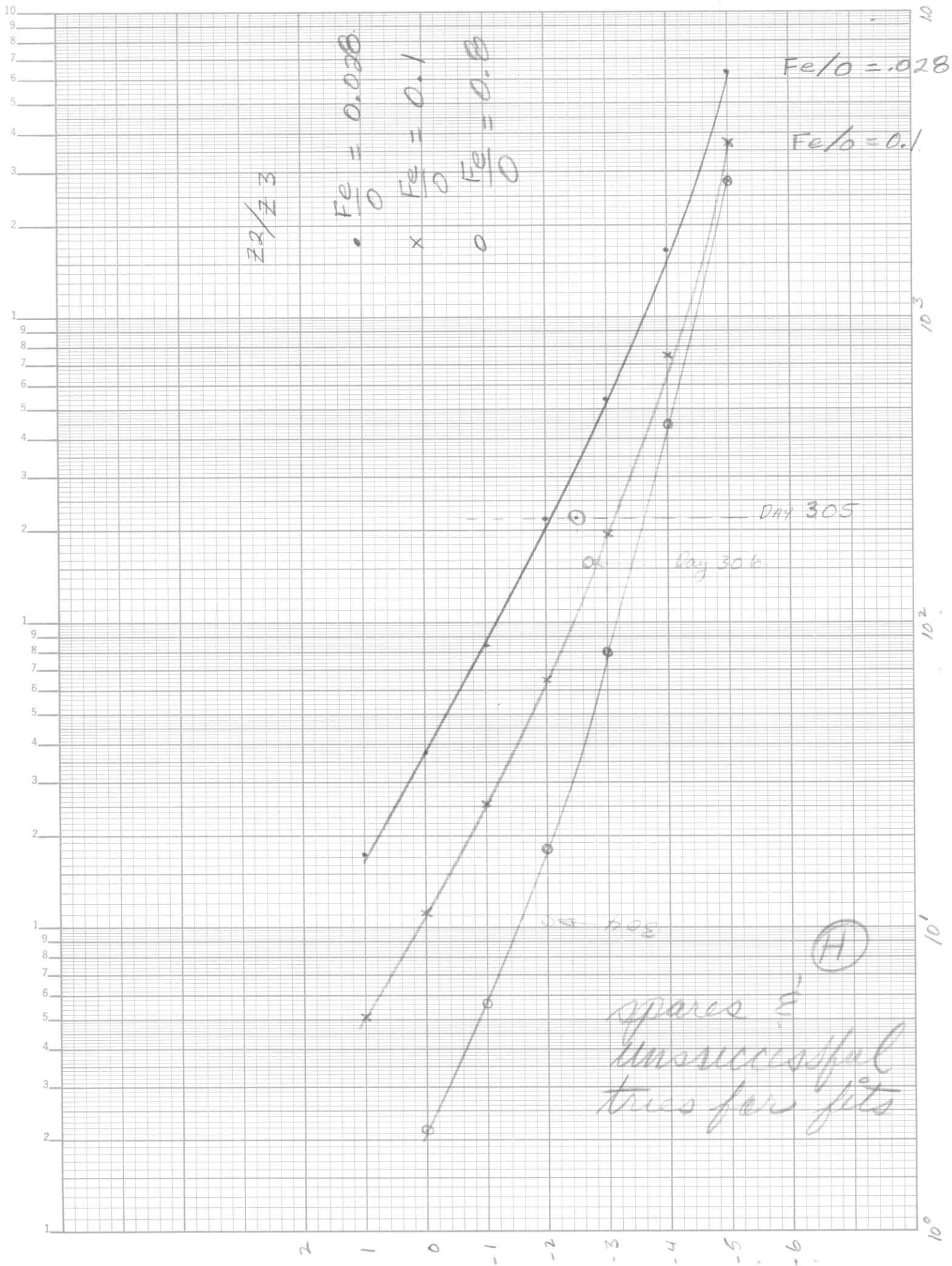
11/27/72
T. P. ARMSTRONG
EXPLORER 47
CPME

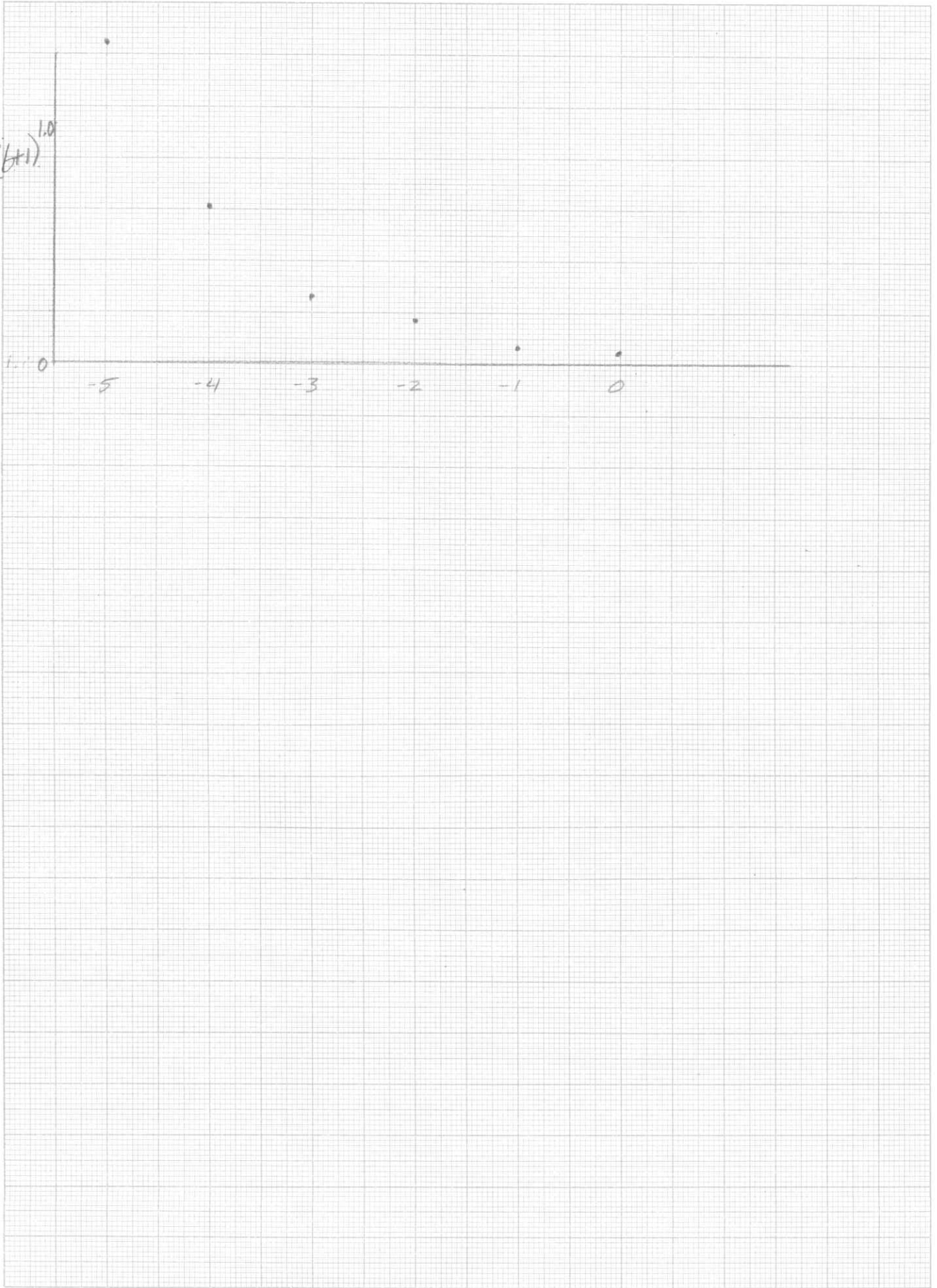
Z_a/Z_3



K.M. LOGARITHMIC 2 X 3 CIRCLES
 KEUFFEL & ESSER CO. 47 7520
 MADE IN U.S.A.

12/23





$$\log_{10} = \log_{10}^{\circ} \ln$$

$$-(b+1) = \exp\{-.115x - .585\}$$

$$b+1 = -e^{-.115x} / e^{.585}$$

$$b = -1 - .557e^{-.115x}$$

$$\log(-(b+1)) = C_1 x + C_2$$

$$C_2 = \log(.045) = -1.347$$

$$C_1 = \frac{\log(-(b+1)) - C_2}{x}$$

$$C_1 = -.265$$

10^0

10^{-1}

10^{-2}

-4

-3

-2

-1

0

$-(b+1)$

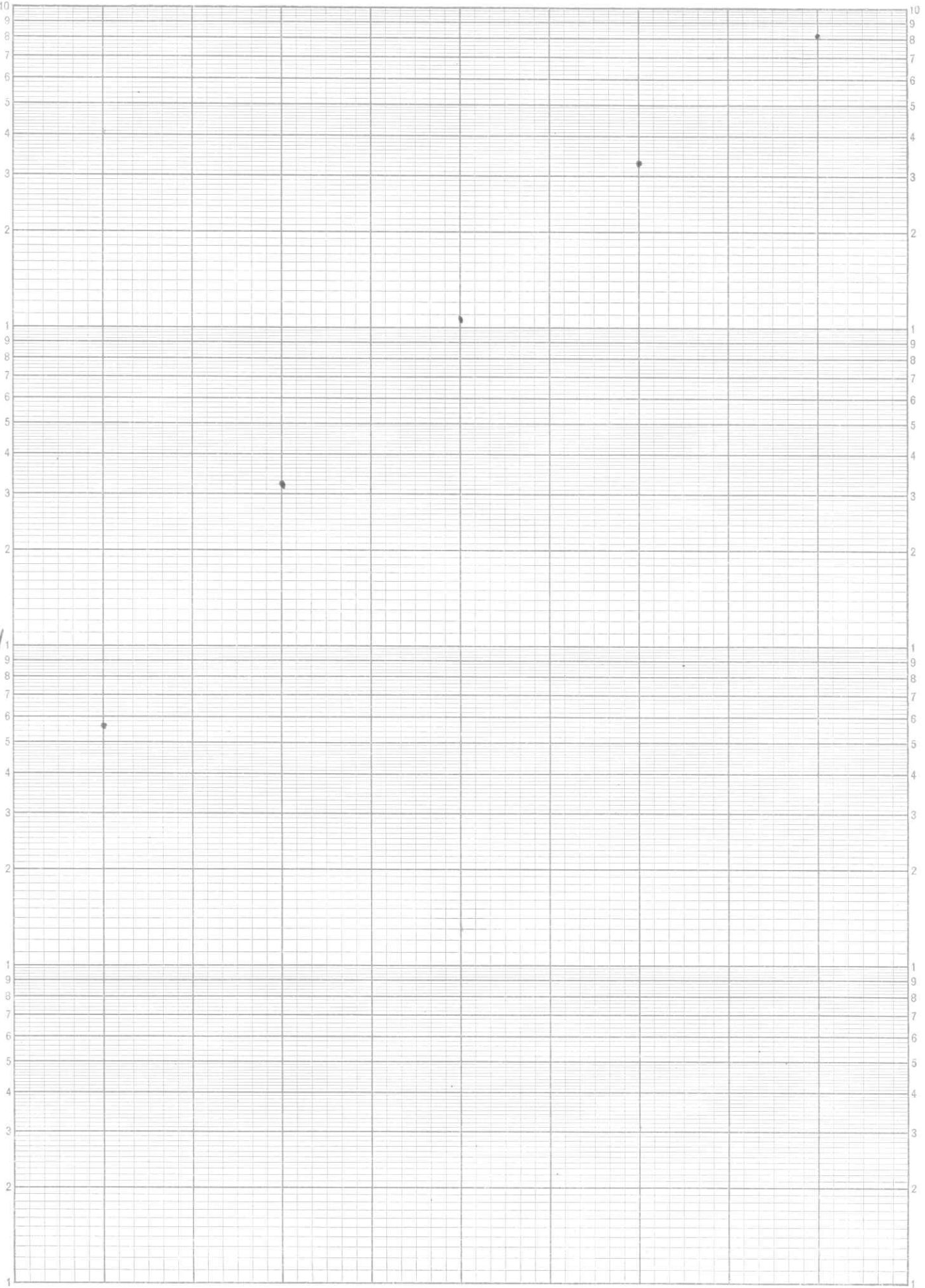
KE SEMI-LOGARITHMIC 46 5890
4 CYCLES X 60 DIVISIONS
MADE IN U.S.A.
KEUFFEL & ESSER CO.

1

1

10

100



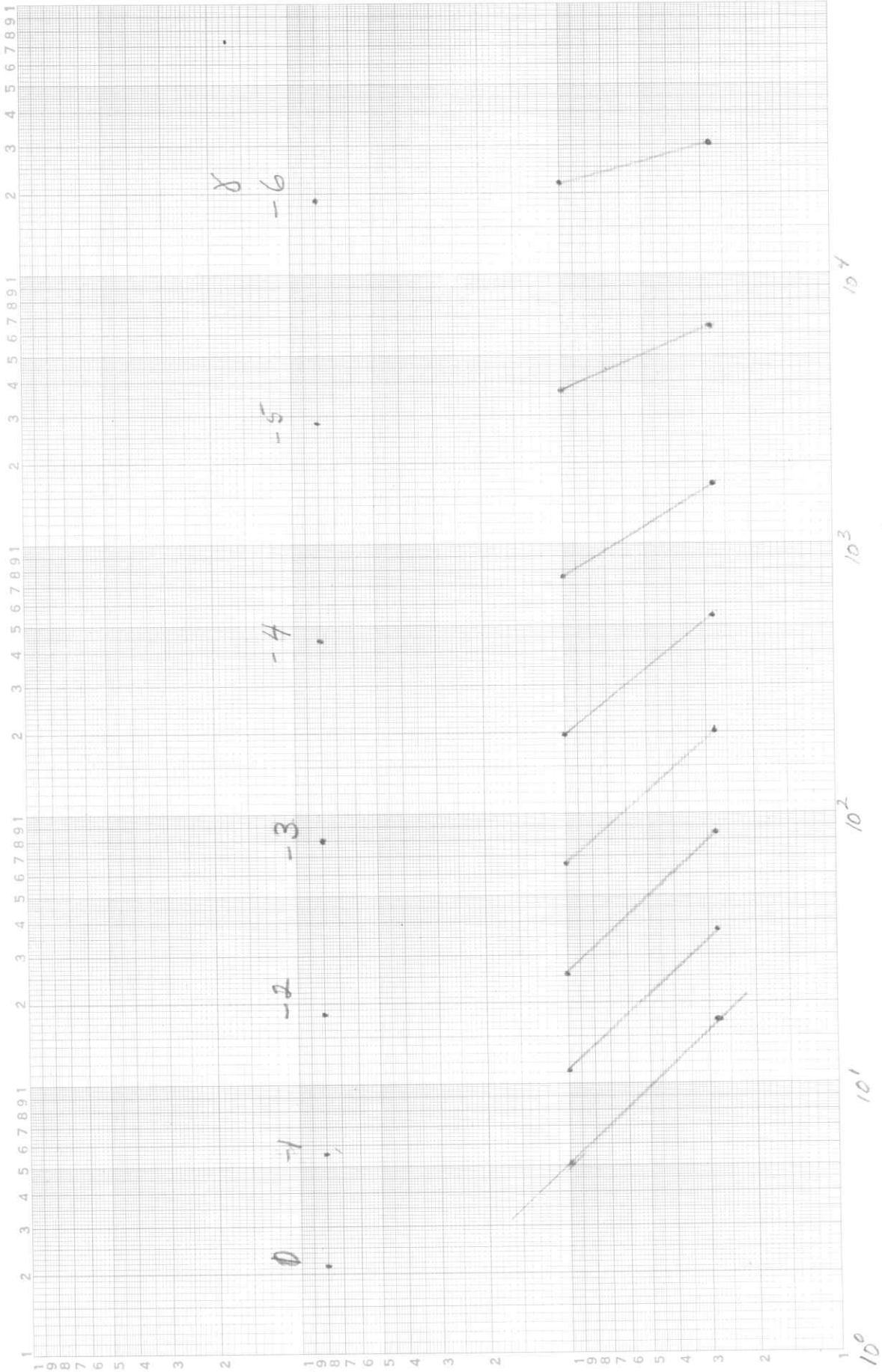
-4

-3

-2

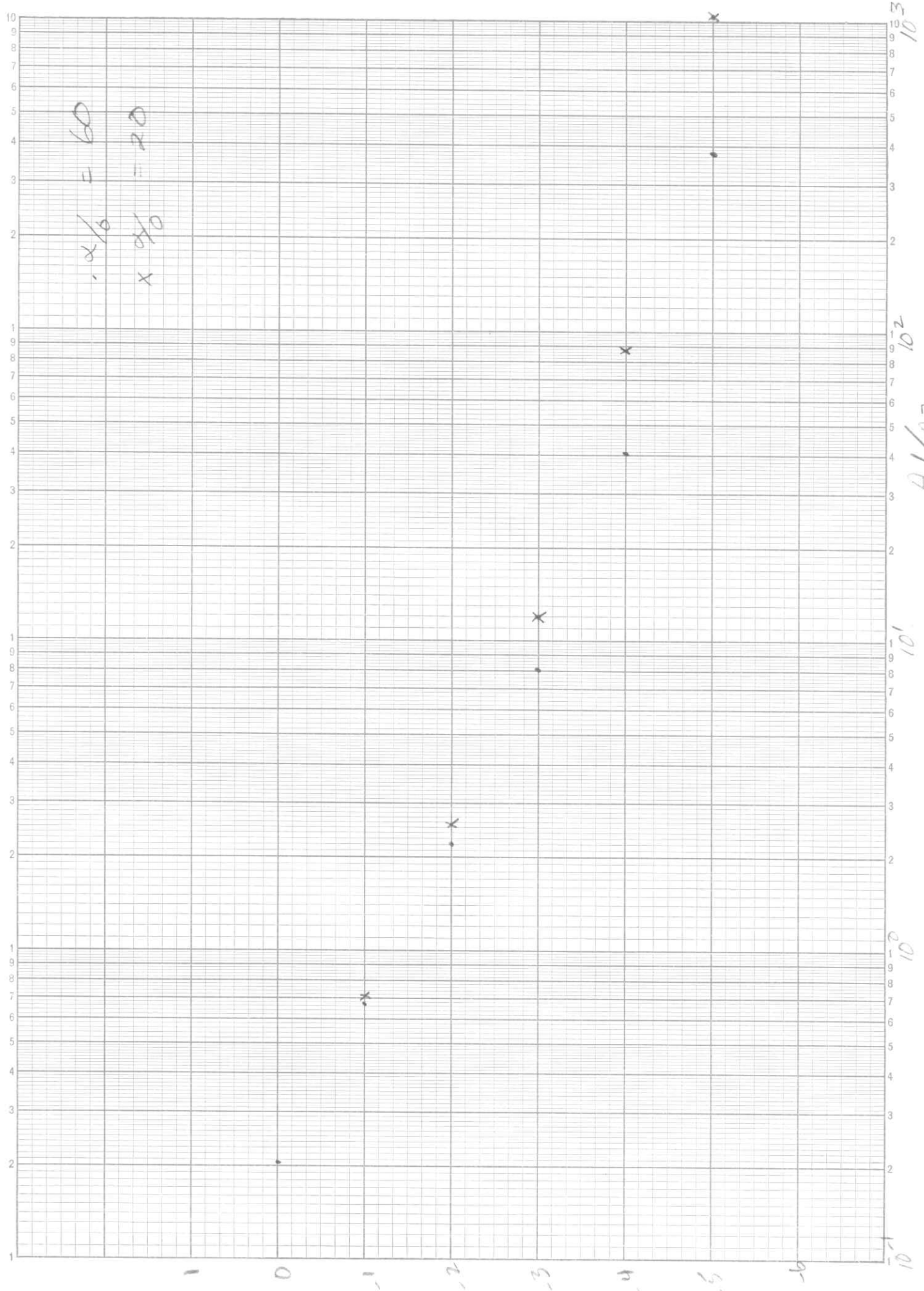
-1

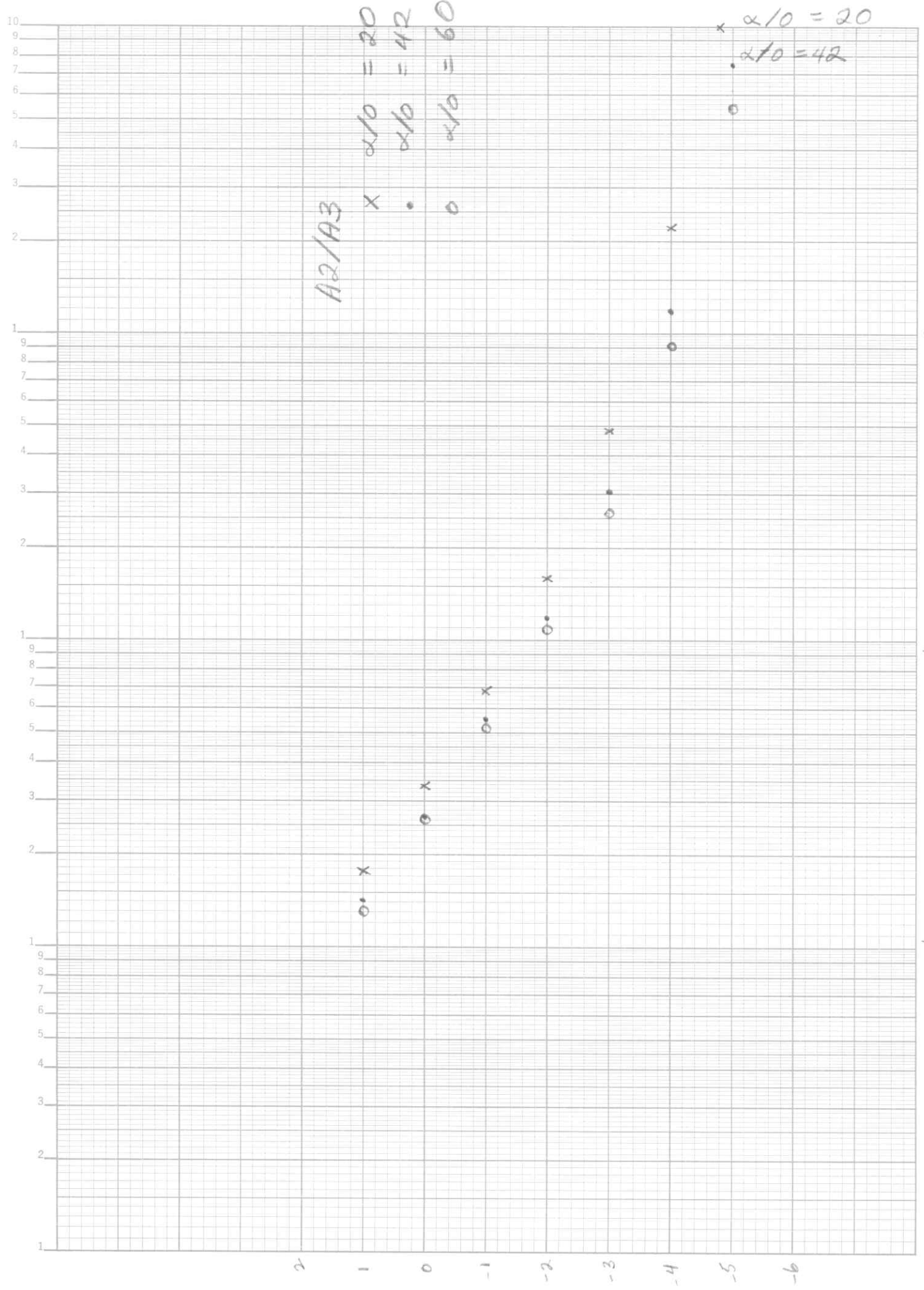
0



Fe/0

22/23





A2/A3

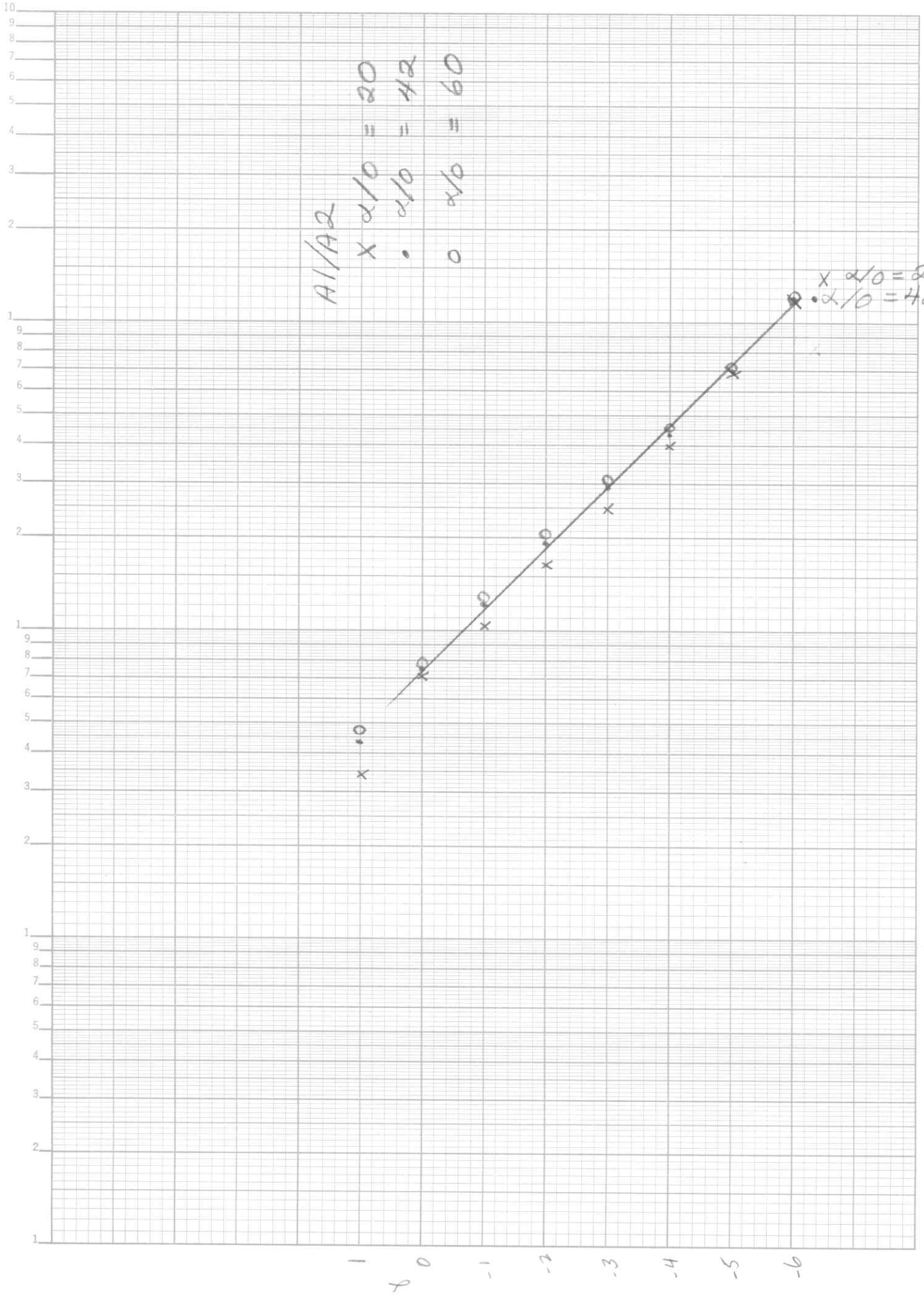
x / 10 = 20
 • / 10 = 42
 o / 10 = 60

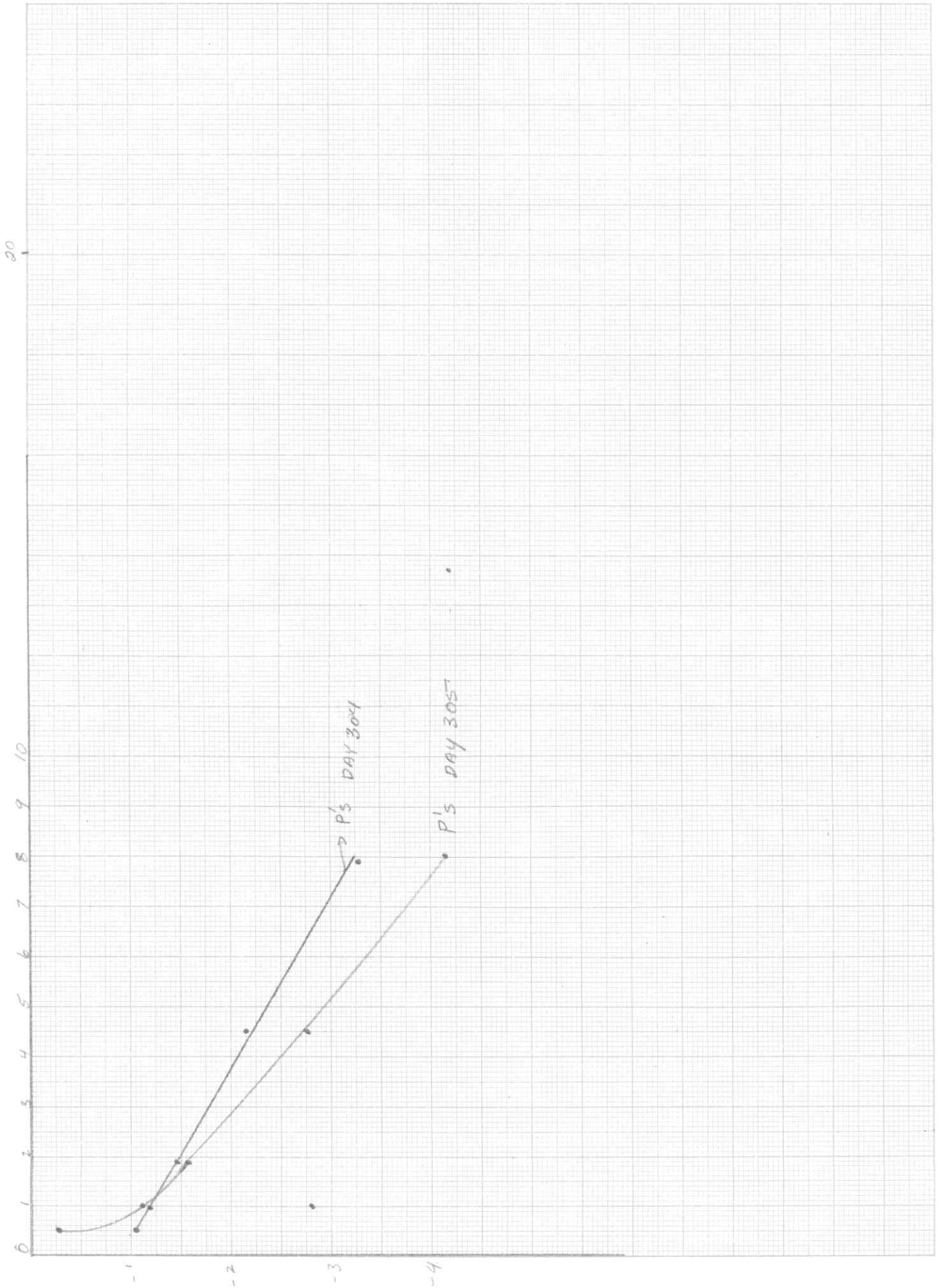
x / 10 = 20
 • / 10 = 42

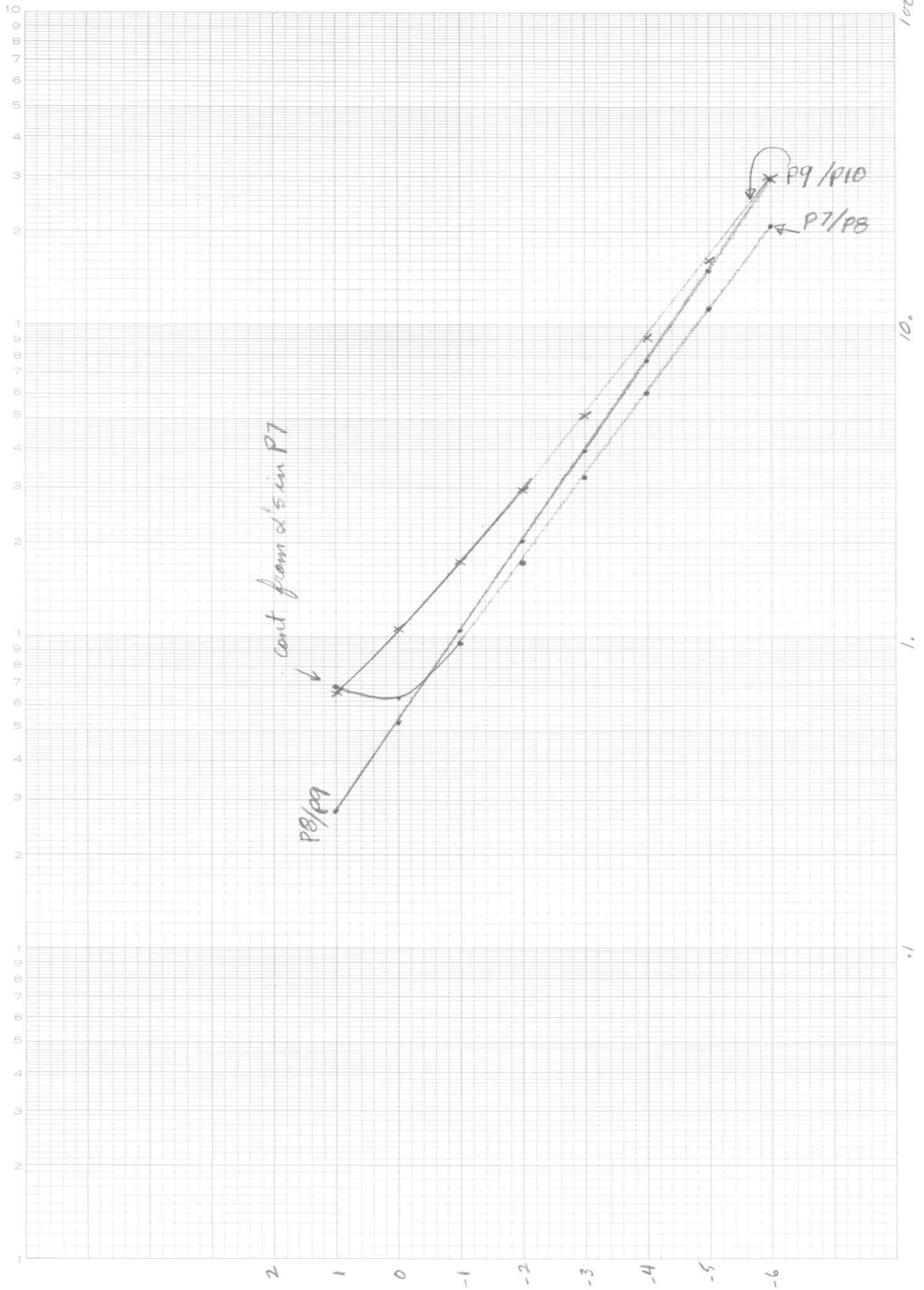
10.

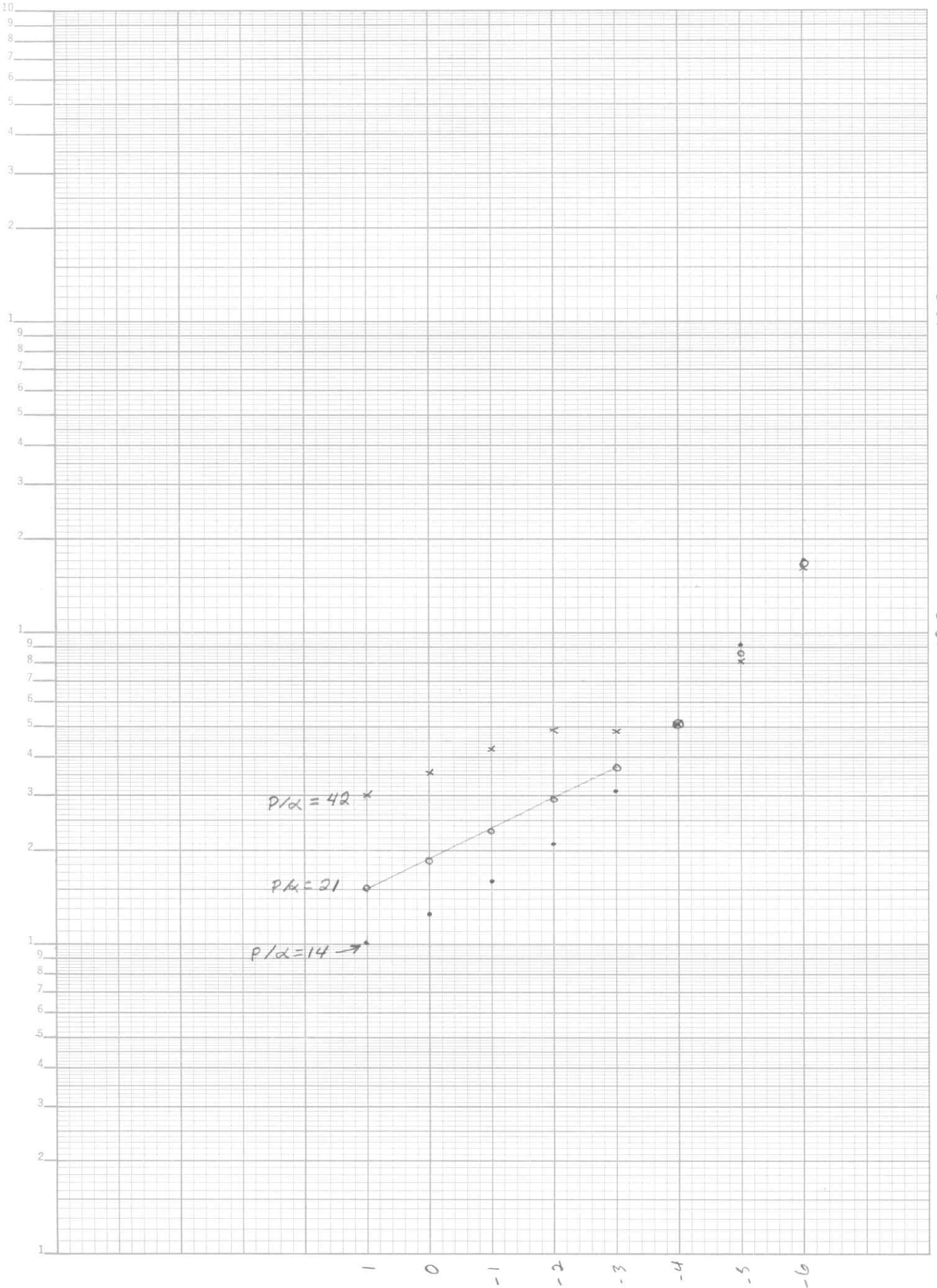
1.

.1







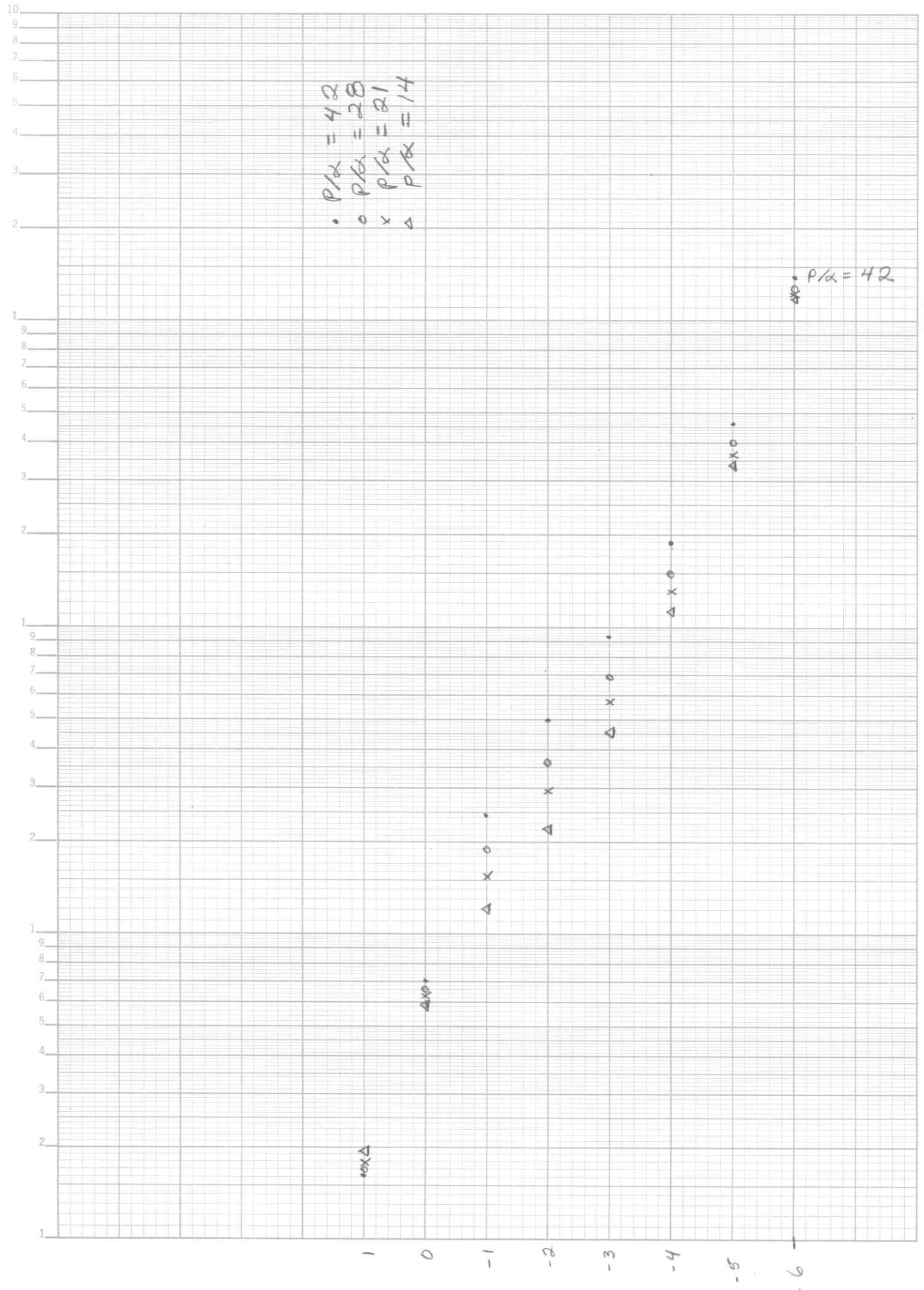


100

100

$P2/A1$

10



• $P/\alpha = 42$
 ○ $P/\alpha = 28$
 x $P/\alpha = 81$
 △ $P/\alpha = 14$

42 • $P/\alpha = 42$

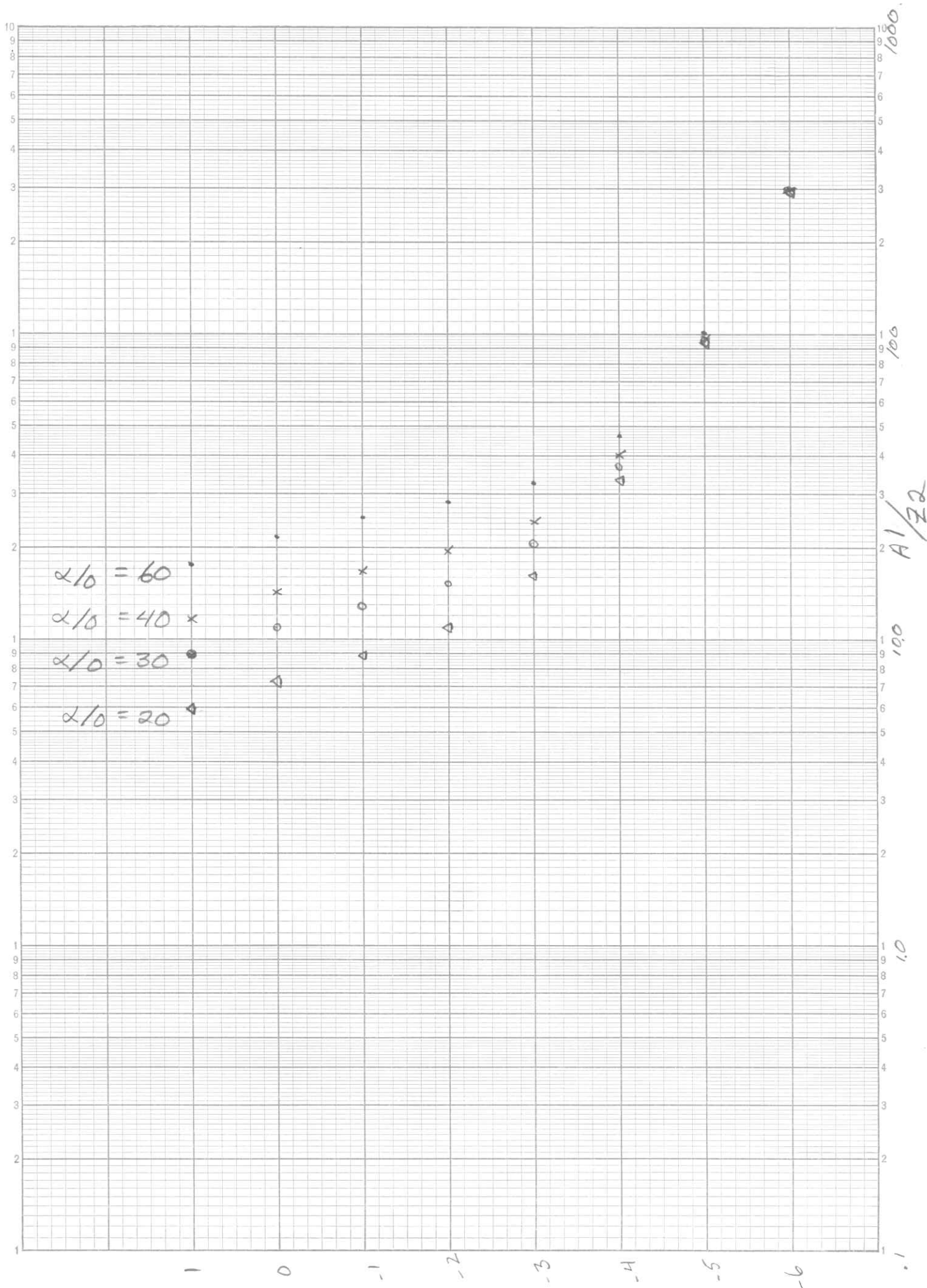
1000

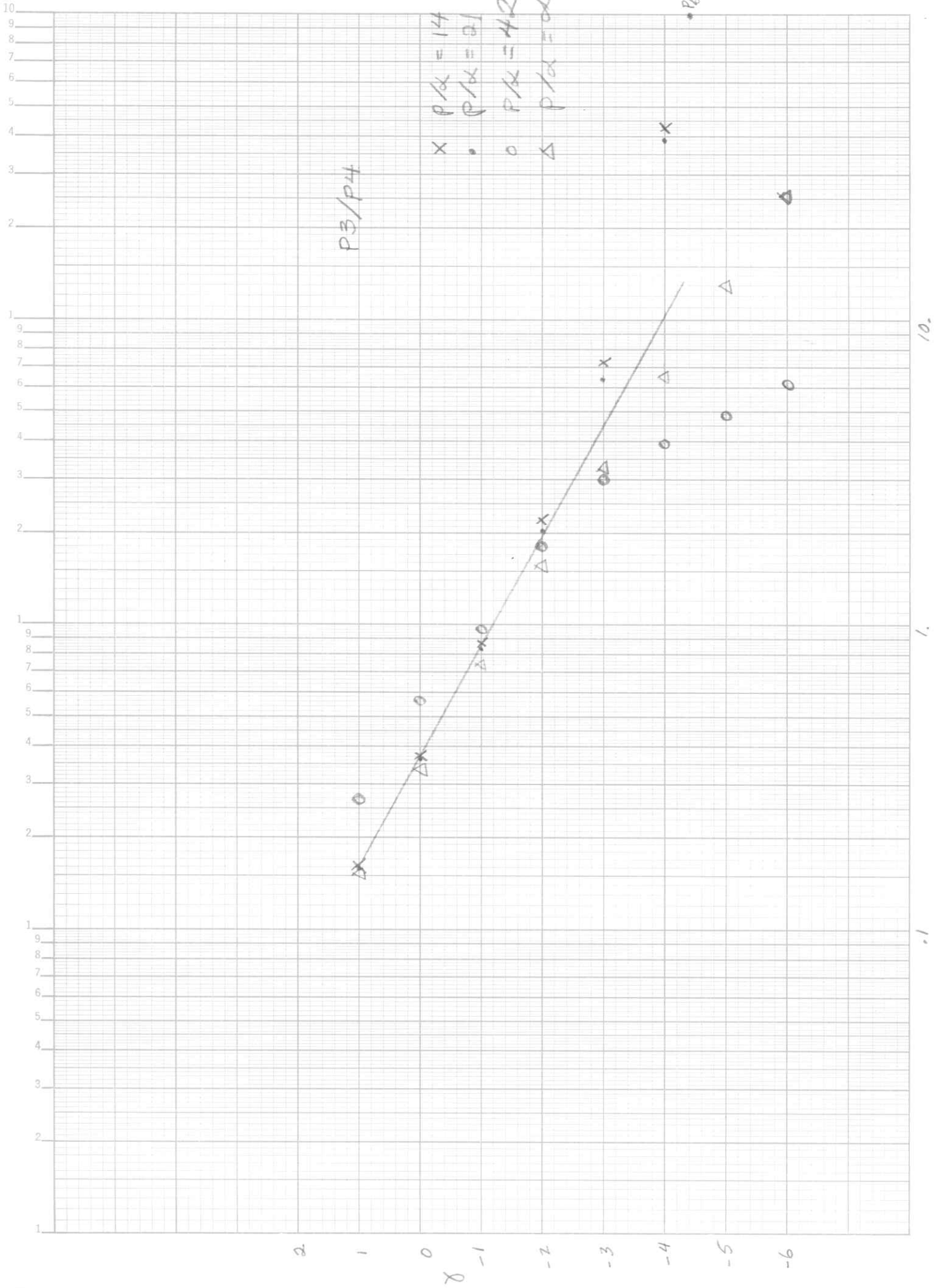
P7/A5

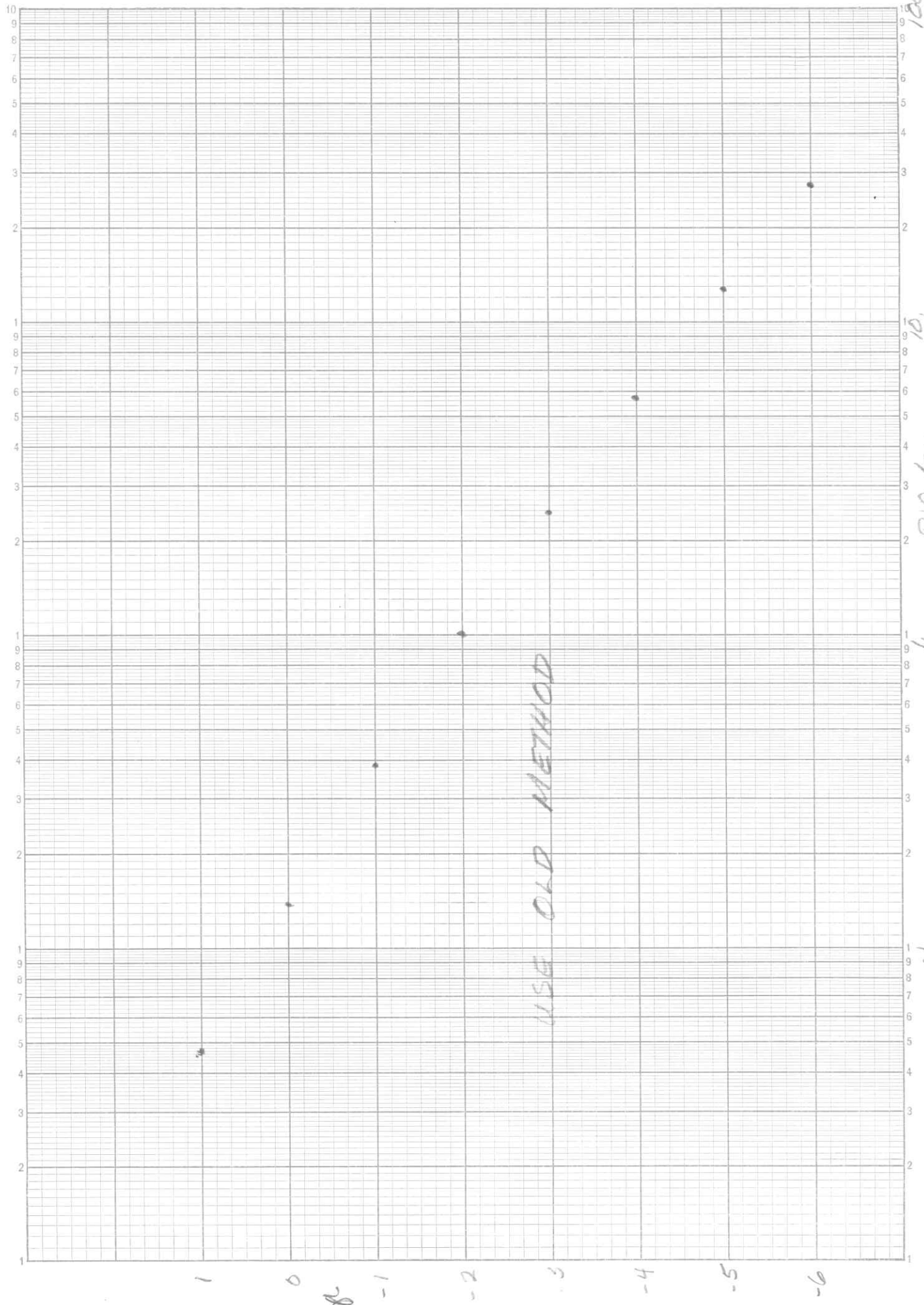
100

10

1

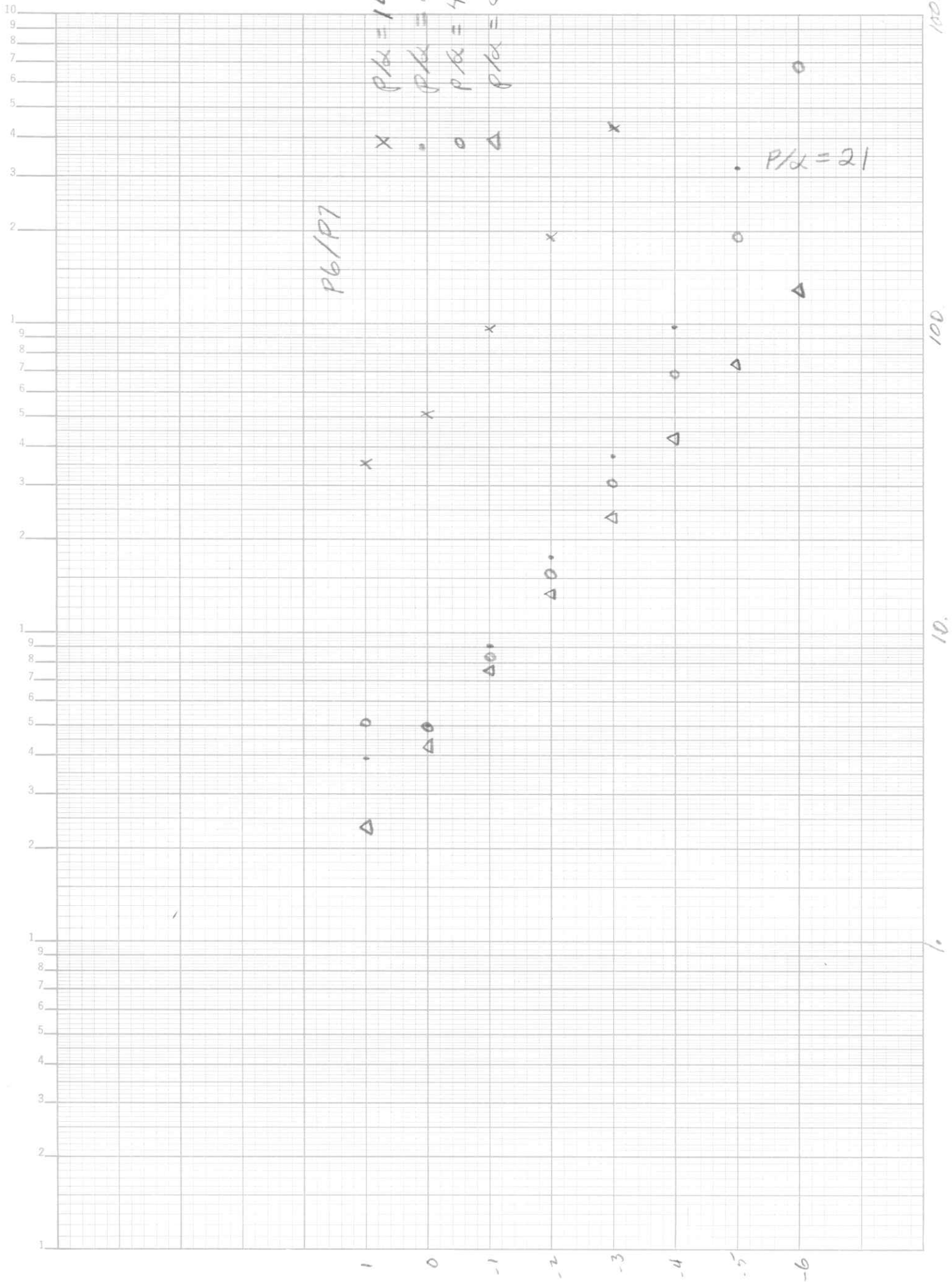






100
10
10/11

USE OLD METHOD

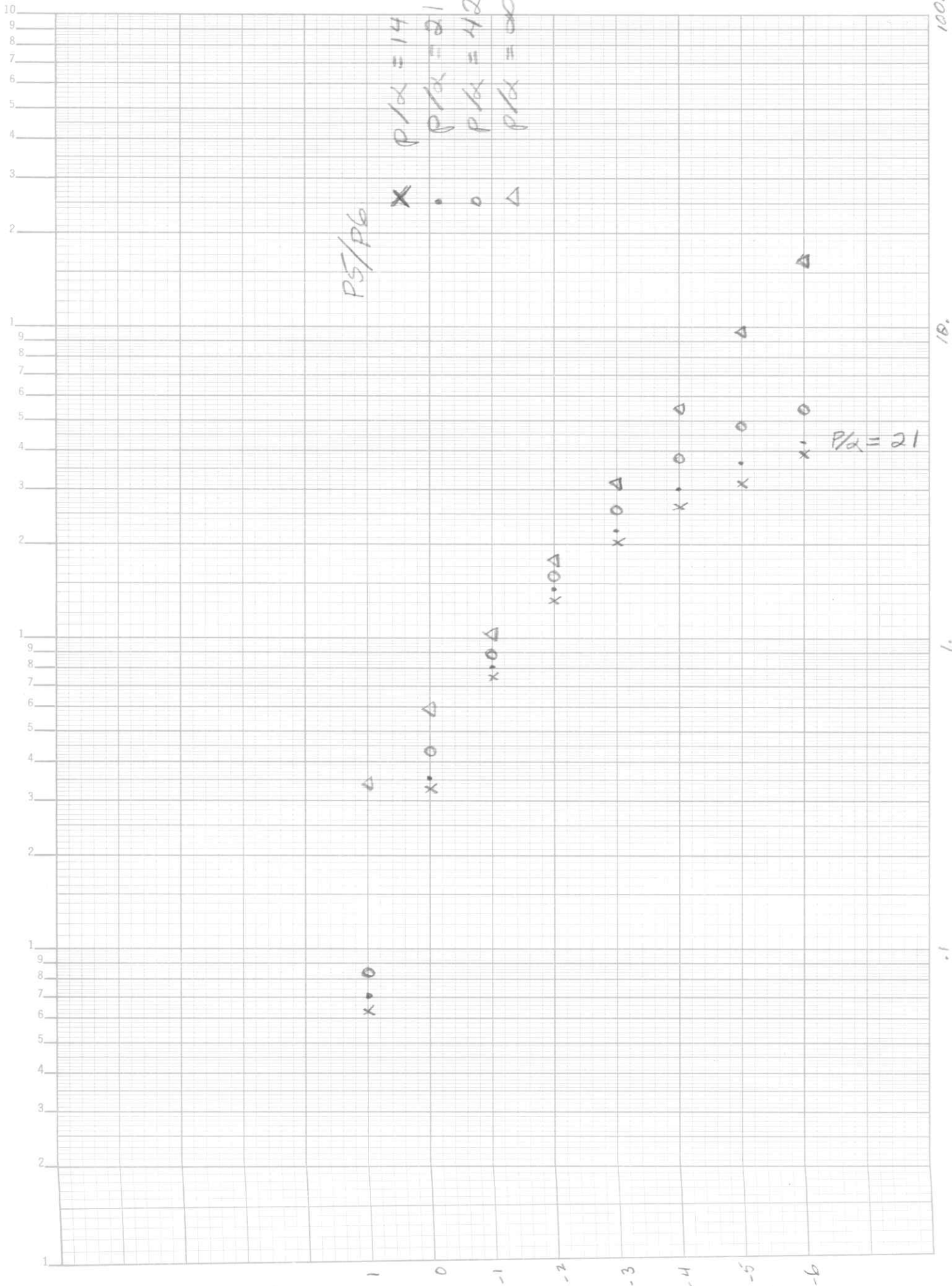


1000

100

10

1



100.
10.
1.
.1