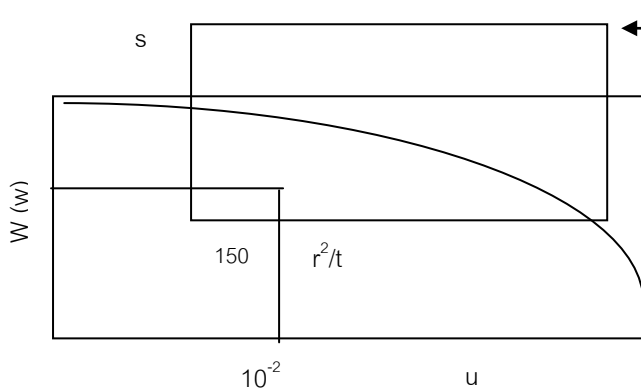


4.4.2 Theis Method of Solution

$$s = \frac{Q}{2\pi T} \int_u^\infty \frac{e^{-u} du}{u} \quad u = \frac{r^2 S}{4Tt}$$

$$s = \left(\frac{Q}{2\pi T} \right) W(u) \quad W(u) = \text{well function}$$

$$\frac{r^2}{t} = \left(\frac{4T}{S} \right) u$$



From s-t data

Table 4.4.1

$$\frac{r^2}{t} = 150 \text{ m}^2/\text{min} = 216,000 \text{ m}^2/\text{d}$$

$$s = 0.18$$

$$T = \frac{Q}{4\pi s} \text{ min}$$

Sample (cf.)

$$= \frac{2500}{4\pi(0.18)} \times 1.0 = \dots \text{ m}^2/\text{d}$$

$$S = \frac{4Tu}{r^2/t}$$

$$= \frac{4 \times 1110 \times 10^{-2}}{216,000}$$

$$= 0.000206$$