

B점의 압력은 구하기 위해 (비례성으로 풀기 위해)

A~B 마찰손실압력

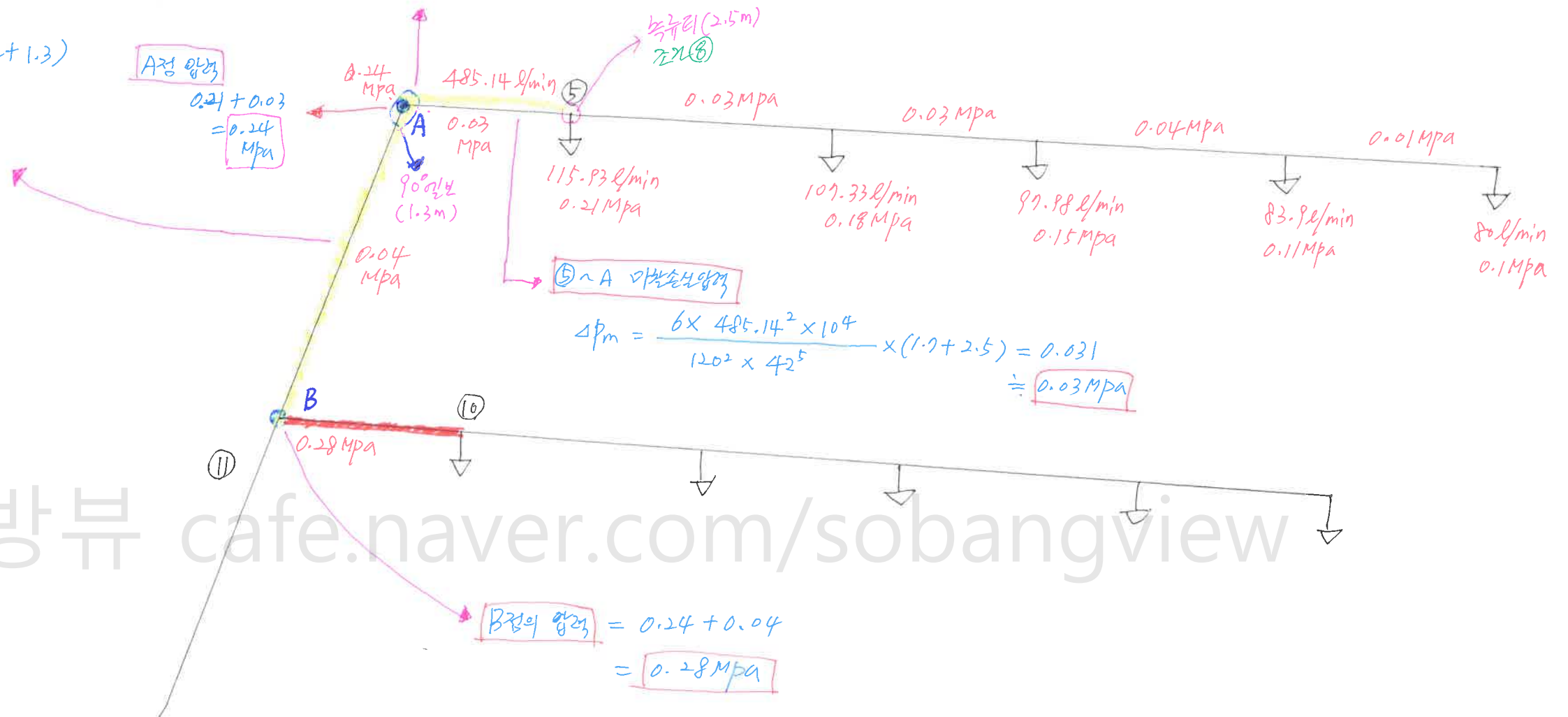
$$\Delta P_m = \frac{6 \times 485.14^2 \times 10^4}{120^2 \times 42^5} \times (2.4 + 1.3)$$

$$= 0.035 \approx 0.04 \text{ Mpa}$$

2) ⑤~⑪ 유수량

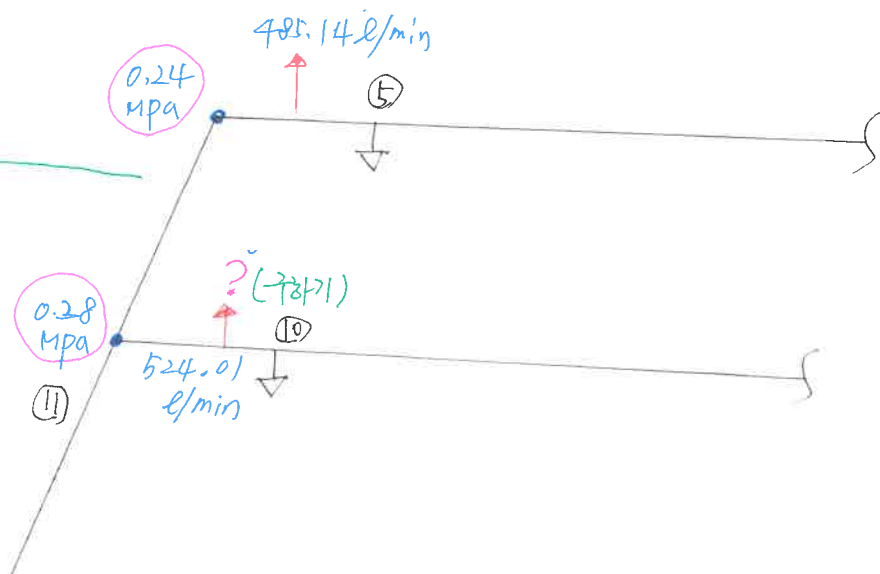
$$Q = 80 + 83.9 + 97.88 + 107.33 + 115.93$$

$$= 485.14 \text{ l/min}$$



소방뷰 cafe.naver.com/sobangview

$Q = K\sqrt{10P}$  에서  
K가 80으로 동일하므로  
비례성으로  
풀면 간단하다.



흐르는  
A점 유량 A점 압력 B점 유량 B점 압력

$$Q_A : P_A = Q_B : P_B$$

$$485.14 : \sqrt{0.24} = x : \sqrt{0.28}$$

$$x = 524.01 \text{ l/min}$$

p. 596 100번

개방형 헤드  
(그리 공식으로  
구한다.)

$$Q = K \sqrt{10P} \quad (\text{방수장 구하기})$$

$$\Delta P_m = \frac{6 \times Q^2 \times 10^4}{120^2 \times d^5} \times L \quad (\text{마찰손실압력 구하기})$$

마찰손실압력

$$\Delta P_m = \frac{6 \times (80 + 83.9 + 97.98) \times 10^4}{120^2 \times 36^5} \times (3.4 + 2.2)$$

$$= 0.026 \div \boxed{0.03 \text{ MPa}}$$

마찰손실압력

$$\Delta P_m = \frac{6 \times (80 + 83.9 + 97.98 + 107.33) \times 10^4}{120^2 \times 42^5} \times (3.4 + 2.5)$$

$$= 0.025 \div \boxed{0.03 \text{ MPa}}$$

마찰손실압력

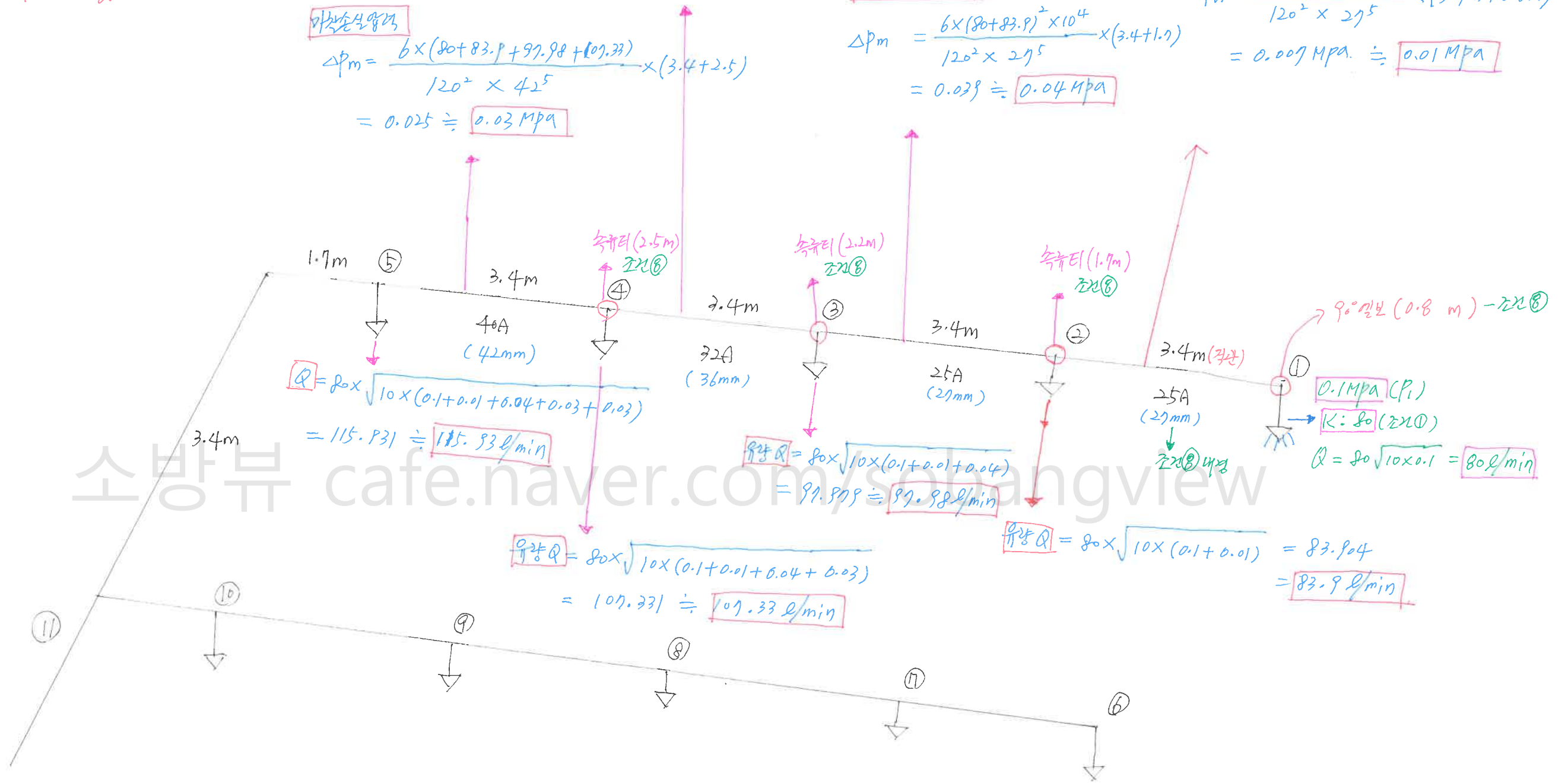
$$\Delta P_m = \frac{6 \times (80 + 83.9)^2 \times 10^4}{120^2 \times 27^5} \times (3.4 + 1.7)$$

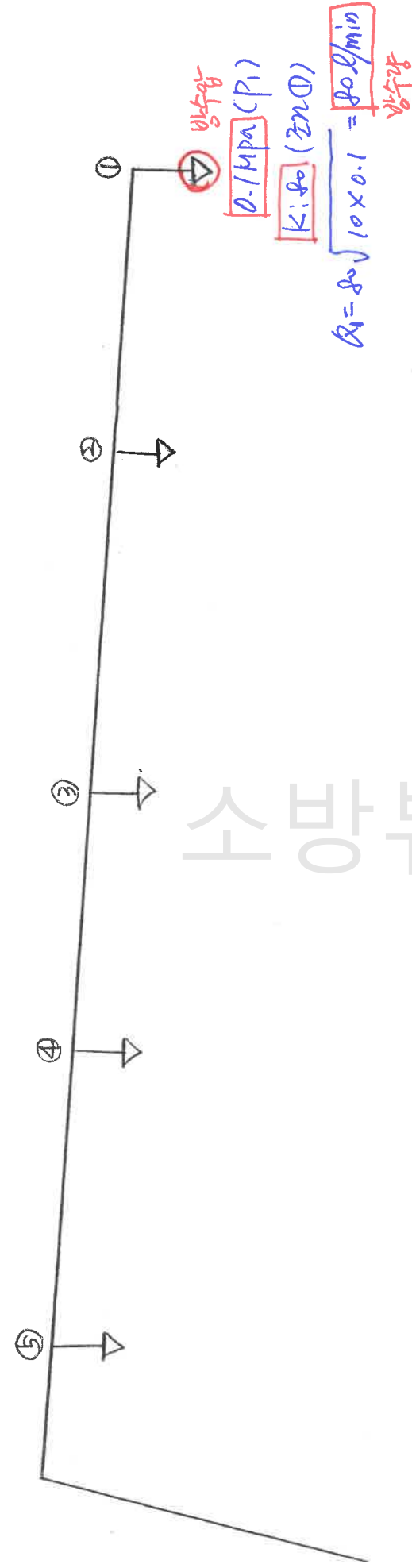
$$= 0.039 \div \boxed{0.04 \text{ MPa}}$$

마찰손실압력

$$\Delta P_m = \frac{6 \times 80^2 \times 10^4}{120^2 \times 27^5} \times (3.4 + 0.8)$$

$$= 0.007 \text{ MPa} \div \boxed{0.01 \text{ MPa}}$$

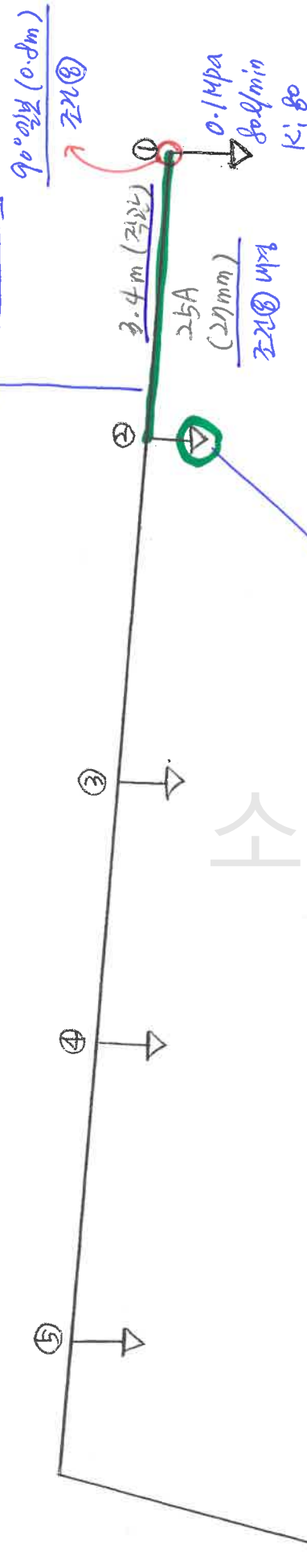




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$$\Delta P = \frac{6 \times 80^2 \times 10^4}{120^2 \times 295} \times \frac{(3.4 + 0.8)}{90.8} = 0.007 \text{ MPa}$$

$$\Delta P = 0.01 \text{ MPa}$$



$$Q = 80 \sqrt{10 \times (0.1 + 0.01)}$$

$$= 83.904 \approx 83.9 \text{ l/min}$$

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$$\Delta P = \frac{6 \times (80 + 83.8)^2 \times 10^4}{120^2 \times 275} \times \frac{(3.4 + 1.9)}{275}$$

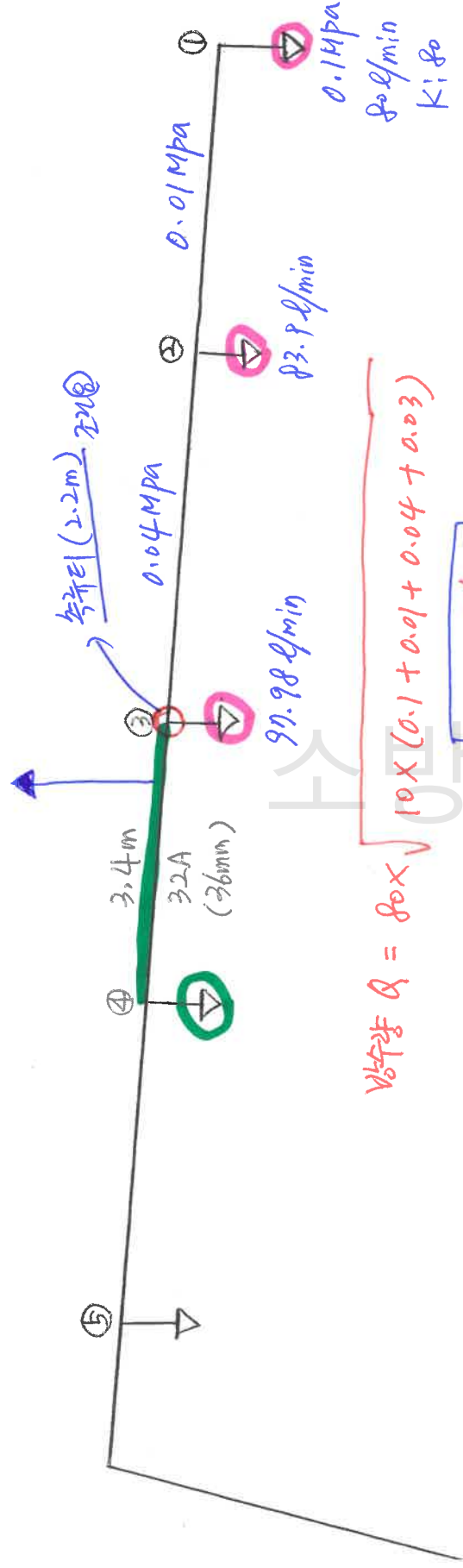
$$= 0.038 \div 0.04 \text{ Mpa}$$



$$Q = 80 \sqrt{10 \times (0.1 + 0.01 + 0.04)}$$

$$= 97.978 \div 97.98 \text{ l/min}$$

$$\Delta P = \frac{6 \times (80 + 83.9 + 99.98)^2 \times 10^4}{120^2 \times 365} \times \frac{(3.4 + 2.2)}{365} = 0.026 \div \boxed{0.03 \text{ MPa}}$$



$$Q = 80 \times \sqrt{10 \times (0.1 + 0.01 + 0.04 + 0.03)} = 107.33 \text{ l/min}$$

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$$\Delta p = \frac{6 \times (80 + 83.9 + 91.98 + 107.33)^2}{120^2 \times 42^5} \times \frac{(3.4 + 2.5)}{\frac{212}{574}} \times \frac{3.4 + 2.5}{\frac{212}{574}}$$

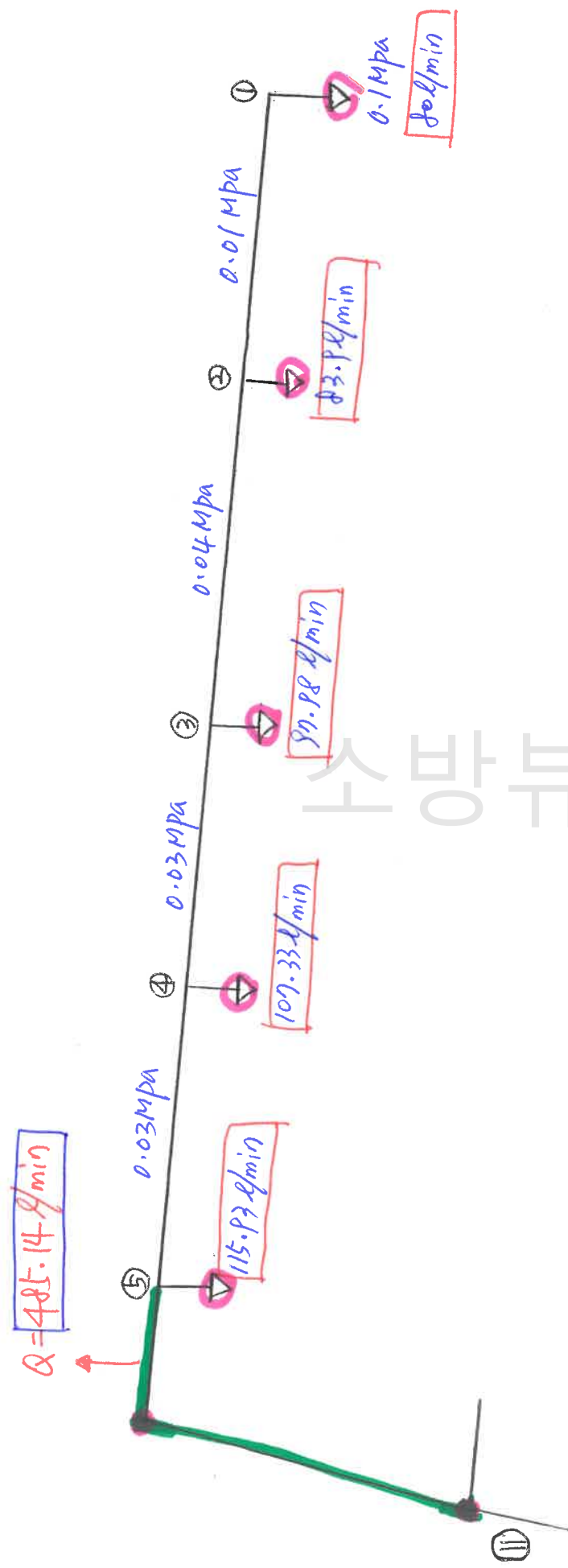
$$= 0.025 \div 0.03 \text{ Mpa}$$

$\frac{2.5}{212} (2.5 \text{ m})$



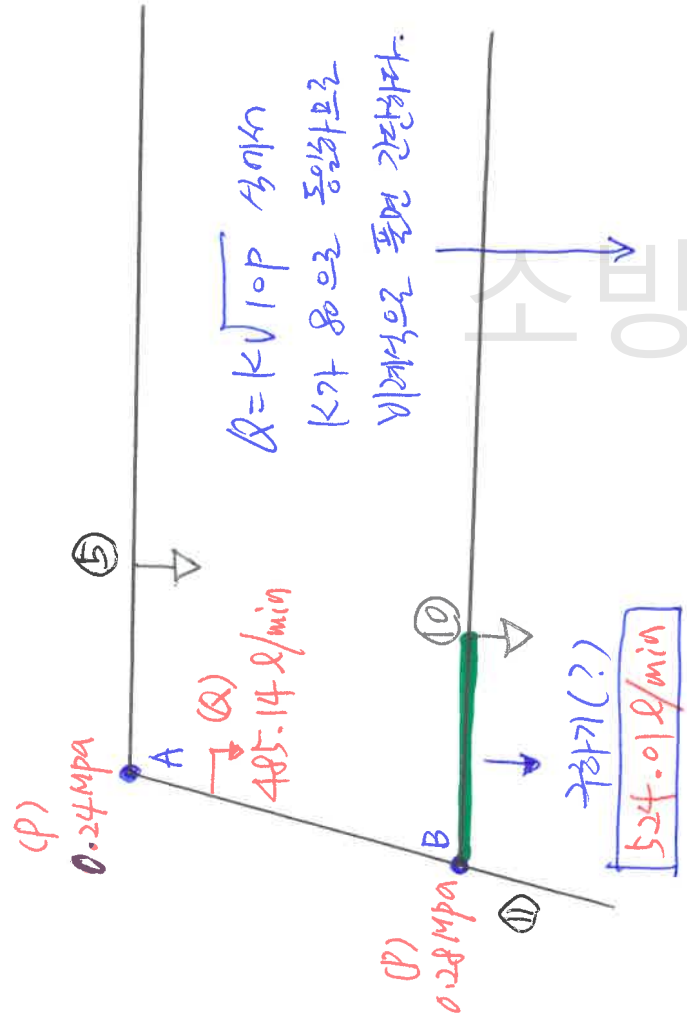
$$Q = 80 \times \sqrt{10 \times (0.1 + 0.01 + 0.04 + 0.03 + 0.03)}$$

$$= 115.93 \text{ l/min}$$









$Q = K \sqrt{10P}$  식에서  
 $K$ 가 80으로 동일하므로  
 비례식으로 풀면 간단하다.

$$\frac{Q_A}{A\text{에 흐르는 유량}} : \frac{P_A}{A\text{에 걸리는 유압}} = \frac{Q_B}{B\text{에 흐르는 유압}} : \frac{P_B}{B\text{에 걸리는 유압}}$$

$$485.14 : \sqrt{0.24} = x : \sqrt{0.28}$$

$$x = 524.01 \text{ L/min}$$

— P —