Size of w: d+1, size of y:n

1- (b)

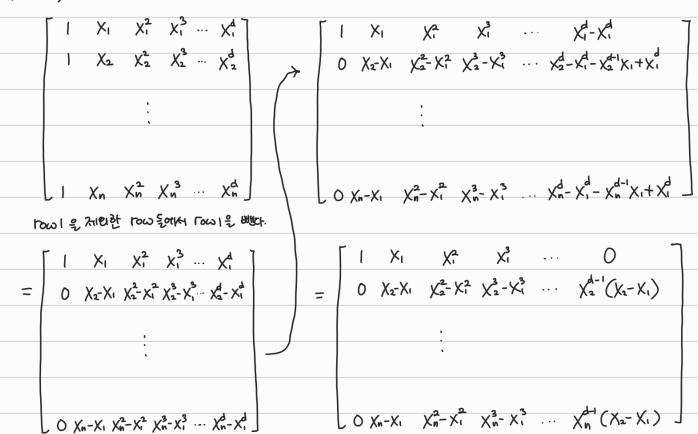
$$A = \begin{bmatrix} 1 & \chi_1 & \chi_1^2 & \chi_1^3 & \dots & \chi_1^4 \\ 1 & \chi_2 & \chi_2^2 & \chi_2^3 & \dots & \chi_2^d \end{bmatrix}$$

$$Size of matrix A: (d+1)n$$

$$\vdots \qquad \vdots \qquad \vdots \qquad \vdots$$

$$1 & \chi_n & \chi_n^2 & \chi_n^3 & \dots & \chi_n^d \end{bmatrix}$$





dtf than column on (-X,)은 당한 뒤

위와 같은 면상은 다른 column 된데은 저왕하면 여왕 같다.

$$= \begin{bmatrix} 1 & X_{1} & 0 & 0 & \dots & 0 \\ 0 & X_{2} - X_{1} & X_{2} (X_{2} - X_{1}) & X_{2}^{2} (X_{2} - X_{1}) & \dots & X_{2}^{d-1} (X_{2} - X_{1}) \\ 0 & X_{3} - X_{1} & X_{3} (X_{3} - X_{1}) & X_{3}^{2} (X_{3} - X_{1}) & \dots & X_{3}^{d-1} (X_{3} - X_{1}) \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ 0 & X_{n} - X_{1} & X_{n} (X_{n} - X_{1}) & X_{n}^{2} (X_{n} - X_{1}) & \dots & X_{n}^{d-1} (X_{2} - X_{1}) \end{bmatrix}$$

용인사를 묶어내면 위 matrik는 다음만 호이 나타면수 있다.

$$= (X_{2}-X_{1})(X_{3}-X_{1})\cdots(X_{n}-X_{1}) \begin{bmatrix} 1 & X_{1} & 0 & 0 & \cdots & 0 \\ 0 & 1 & X_{2} & X_{2}^{2} & \cdots & X_{n}^{d-1} \\ 0 & 1 & X_{3} & X_{3}^{2} & \cdots & X_{n}^{d-1} \\ \vdots & & & & & \vdots \\ 0 & 1 & X_{n} & X_{n}^{2} & \cdots & X_{n}^{d-1} \end{bmatrix}$$

Life matrix on cast on see out bysho माम्या देश देश det A है रेगे न प्रार

$$= \prod_{1 \leq i < j \leq n} (X_j - X_i)$$

1-(d)

det A = T (X;-Xi) 이익 det A >+ non-zero 能和知图 X1, X2,..., Xn 管 能 从 经 经 经

(- (e)

$$\Leftrightarrow$$
  $\omega = A^{-1} \cdot y$  of  $= A \cdot y = 0$   $= A \cdot y = 0$ 

2.

matrix A & SVD의 क्रेंचर पर्नेश म्हेण प्रस्प न प्राप्त.

$$A = U \Sigma V^T$$

GERMA AW=Y MIM USUTW=Y OLCH. ANH 弘地M We 的四 Solution是 Cher 注中

$$U\Sigma V^T\omega = 9$$

EY VITUIVIU = VITUTY