```
The co-varience matrix E is:
    4.0000 - 2.7500
   -2.7500 2.0000
K cap is:
   -2.0000 1.0000
    1.5000 -0.5000
The Best Linear Unbiased Estimate (BLUE) for x is:
    0.6194
    0.4591
```

```
The co-varience matrix E is :
    0.0679 - 0.0260
   -0.0260
          0.1129
K cap is:
   -0.1050
          0.0525 0.1895
    0.1872
             0.1564
                      -0.1313
The Best Linear Unbiased Estimate (BLUE) for x is:
   -1.4303
    1.8791
```

```
The co-varience matrix E is:
    0.0487
             0.0054
    0.0054 0.0618
K cap is:
   -0.0540
             0.1046
                      0.1480
                               -0.0518
    0.1041
             0.0715 -0.0637
                                0.0843
The Best Linear Unbiased Estimate (BLUE) for x is:
   -1.2201
    1.5368
```

$$Z_{00} = \begin{bmatrix} 1 & 2 & 2 & 1 \\ 0 & 1 & 2 & 2 \\ 1 & 2 & 2 \end{bmatrix}$$

$$\sum_{11} = \begin{bmatrix} 2 & 2 & 1 \\ 2 & 1 & 2 \end{bmatrix}$$

$$\sum_{21} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{11} = \begin{bmatrix} 2 & 2 & 1 \\ 2 & 1 & 2 \end{bmatrix}$$

$$\sum_{12} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{13} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{14} = \begin{bmatrix} 1 & 2 & 1 \\ 1 & 2 & 2 & 1 \end{bmatrix}$$

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$$\sum_{14} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

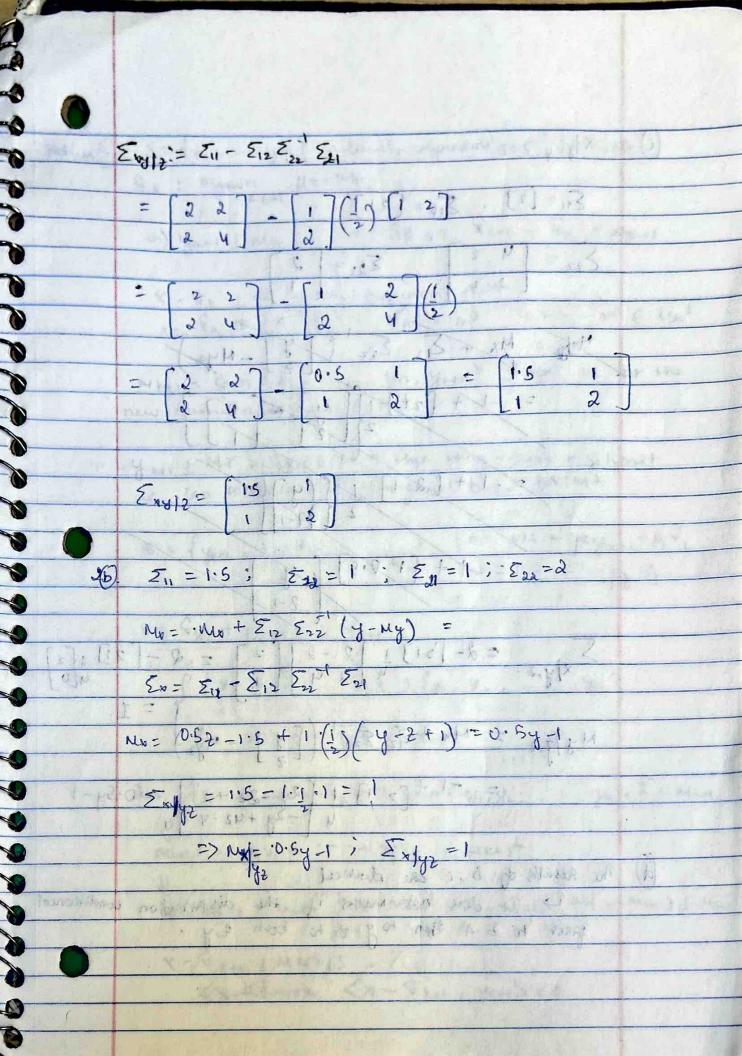
$$\sum_{14} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{14} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{14} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{14} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \end{bmatrix}$$

$$\sum_{14} = \begin{bmatrix} 1$$



(c)
$$V|_{y=y,2=2}$$

$$E_{11} = \begin{bmatrix} 2 \end{bmatrix} \quad E_{12} = \begin{bmatrix} 7 \end{bmatrix}$$

$$E_{22} = \begin{bmatrix} 4 & 2 \\ 2 & 2 \end{bmatrix} \quad E_{21} = \begin{bmatrix} 3 \\ 2 \end{bmatrix} \quad Nyy$$

$$= \begin{bmatrix} -1 + \begin{bmatrix} 2 \end{bmatrix} \end{bmatrix} \begin{bmatrix} 2 \\ -1 \end{bmatrix} \begin{bmatrix} 4 \\ -2 \end{bmatrix} \begin{bmatrix} 2 \\ 2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix} \begin{bmatrix} 2 \\ -2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix} \begin{bmatrix} 2 \\ -2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix} \begin{bmatrix} 2 \\ -2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix} \begin{bmatrix} 2 \\ -2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix} \begin{bmatrix} 2 \\ -2 \end{bmatrix} \begin{bmatrix} 2 \\ 4 \end{bmatrix} \begin{bmatrix} 2 \\ -2 \end{bmatrix}$$

Problem (3) S= dy, -- yn} -> linesely independent, N= springs & a) year I Mu P: JB 5.7 Xker = Non + Byner X-Sx IM by pre-projection shown. p= fu + (x- vn) = wn + mt where on E Mal Kins Mak ? NKHI = Span (y), --. yn, yart & fatter we ger the new measurement years & Mkt 1 Y KHI I MK; JKHI & Mich than wing gram - Schmit 0 ne can corrupter an prins ganal bosis for MI. B:= {yut, V1, V2 __ Yt} => MI = BYK+1+B, V1

1----+Bt Pt. 9 • N= Six of Bynor & Mari 9 ({ V1, V2, --- V+ } 1 & y, y > --- y 2 } ({ V1, V2, --- V+ } 1 y 4) 0 0 9 Thus fv1, V2, - - - + & I Span & 4, 42. - - - - - - - - Man • with = Birt + . - - + Birt Errety • N= mu+1 + mo+1 (=> mo+1 = x - mo+1)=> (x-mo+1) 1 mo+1 X-8 KM IMMALL - THANKING XXXXXXX (X - X KH) YRHI) ED

3 (TREE , YEAR) = (N, YEAR) KER + BYLLI, YELL) = (N, YELL) Since you I'me is in EMa: Kok, Year >=0 The Since yet I me and I look to => (xx + Byen, yen) = p3(yen, yen) = (x), yen) >> B= Lx, ymi) (ykn, ymi) Jen | x = ceg min u yen - mM. your - yearly I we by pre-projection theorem. n complete and term grant to me the my 7 = 441 - Yestk, neger V L(y1, 42, 6-yh) DKH = Pk + BY -B= (x, y) | B= (x, y km - g km / k) (4xx) (4xx) Ly KH - YKH K. JKH - YKHIL VII VEN - - - Y . W. L. J. GV . - V . IV MKH = Span f 81-82, - - - JK- YKH - y H1/k } = MKH. WKH EMK must be the best sign metal of 1-70 Mats Since you for the Mini gent le 1 (g KH- GENT) K Wen = De f B (gen - Sen /k) B= (N, yrn) - (N, yrn/u) eld I Count (y KHI, YKH) - (y KHI, Y KHIK)

```
-0.0278 0.1528
K cap is:
    0.2222
    0.2778
The Minimum Variance Estimate for x is:
    0.3417
    0.4271
```

The co-varience matrix E is:

0.2778 - 0.0278

```
The co-varience matrix E is:
    0.1937 - 0.0813
   -0.0813 0.1187
K cap is:
  -0.0375 0.1375
    0.1125 0.0875
The Minimum Variance Estimate for x is:
    0.4504
    0.4963
```

```
The co-varience matrix E is:
   0.0545 - 0.0105
  -0.0105 0.0828
K cap is:
  -0.0695
            0.0599 0.1461
   0.1287 0.1269 -0.0743
```

The Minimum Variance Estimate for x is: -1.0134

1.2402

```
The co-varience matrix E is:
    0.0437    0.0072
    0.0072    0.0538

K_cap is:
    -0.0441    0.0962    0.1297    -0.0429
```

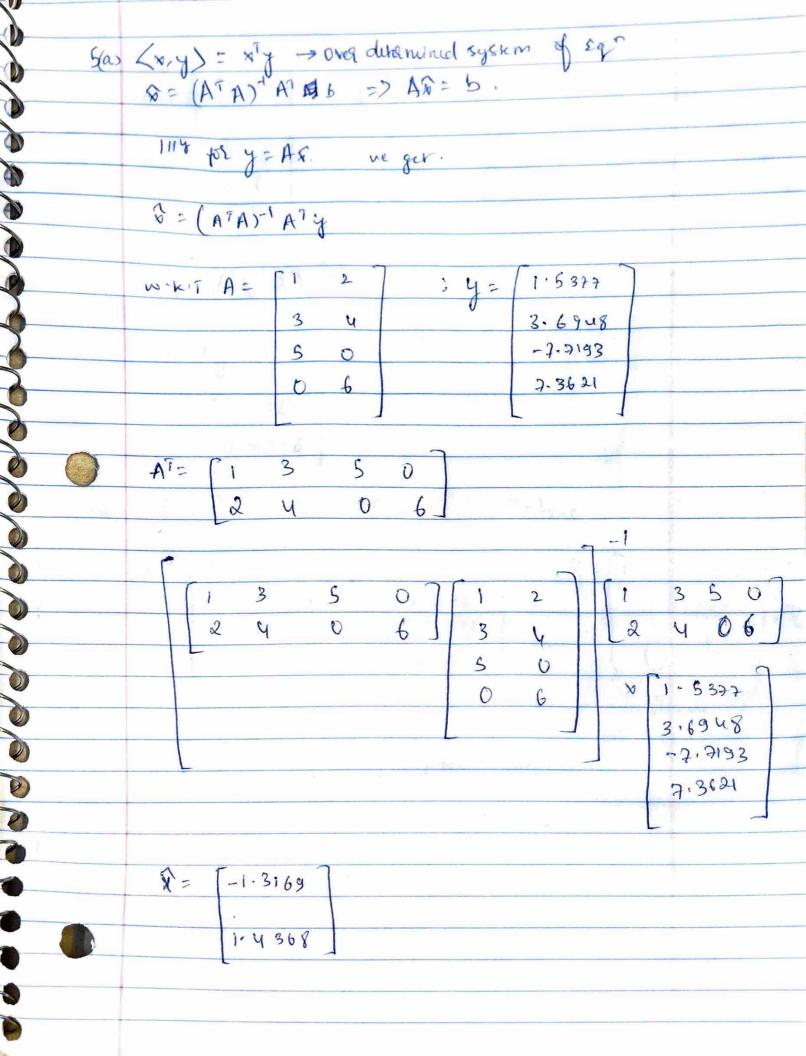
0.0873

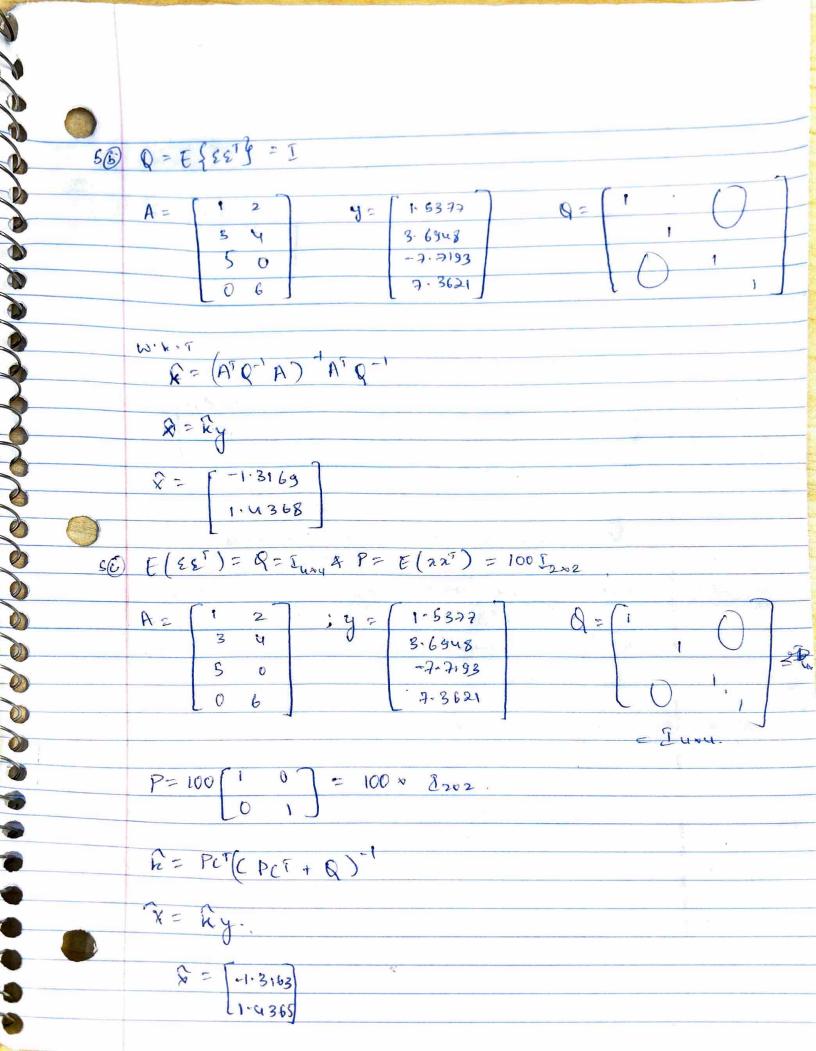
1.2667

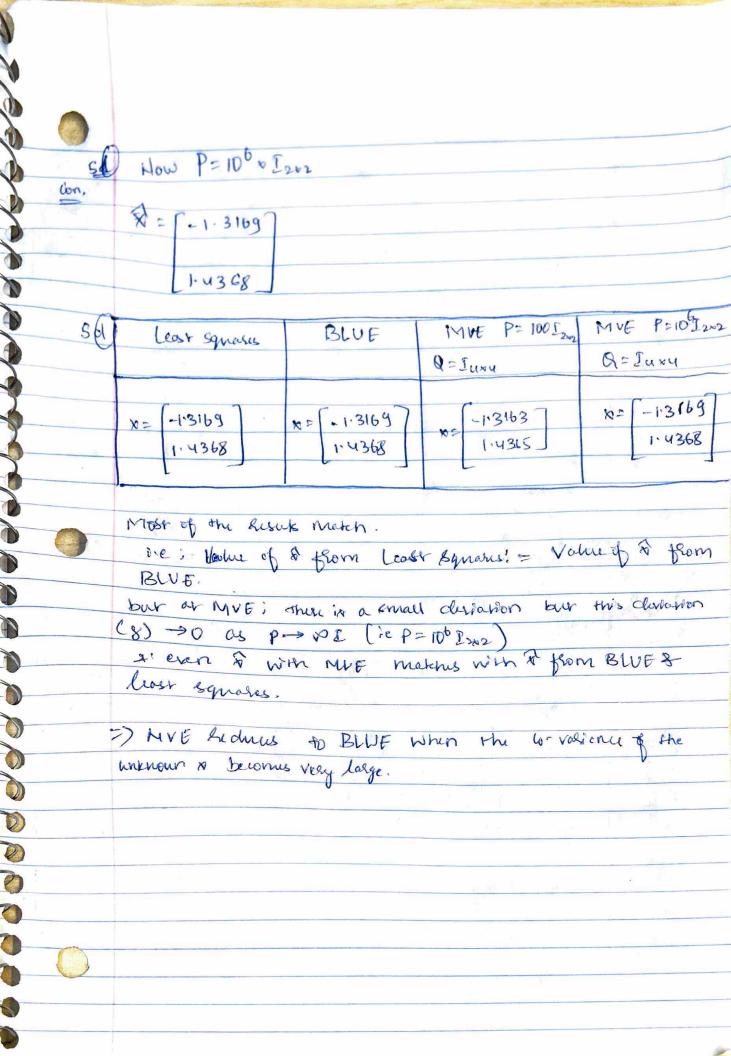
The Minimum Variance Estimate for x is:

0.0674 - 0.0474

0.0703







```
The co-varience matrix E is:
   0.0437 0.0072
   0.0072 0.0538
The Minimum Variance Estimate for x is:
  -0.8836
   1.0802
```