Danaune zaganue
11.36 3A-2B; A=(3 4), B=(0 1) 3-(12)-2-(9 1)=(3 6)-(02)=(3 4) 1.137 2B-5A, A=(0, 2 4), B=(0, 5 10) 2-(0 5 10) -5-(0 2 4) = (0 10 20) --101020 = (000)1.1.38 A- A.E. A=(2 3) $\begin{pmatrix} 2 & 3 \\ -2 \end{pmatrix} - \lambda \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} = \begin{pmatrix} 2 & 3 \\ 3 & -2 \end{pmatrix} - \begin{pmatrix} \lambda & 0 \\ 0 & \lambda \end{pmatrix} = \begin{pmatrix} 2 - \lambda & 3 \\ 3 & -2 - \lambda \end{pmatrix}$ 1.1.39 4A - 7B, A = (1 -2 5 3); B=(0 2 7 5) +(0 -14 -49 35) = (4 -22 -29 47)(56 -7 -21 6) (64 -7 -33 4)(-8 -18 14 -19)

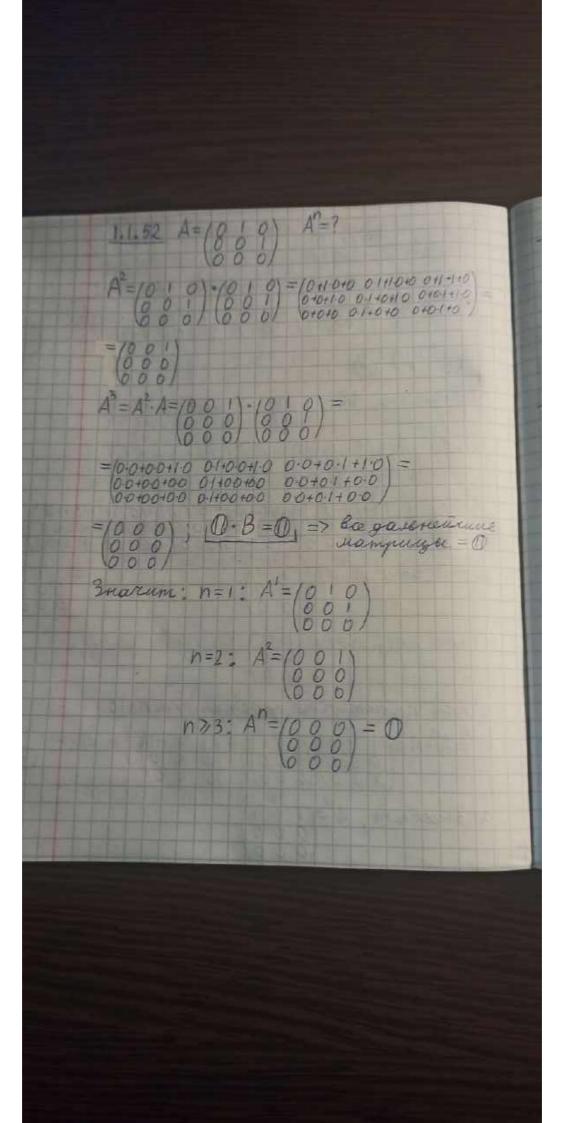
1.1.40 5A-3B+XC, A=(3 5 1), B=(5 2 7 C=(-5 3 1) 5: (1 -2 0) -3: (5 1 -2) +2: (-5 3 1) = $= \begin{pmatrix} 5 & -10 & 0 \\ 15 & 25 & 5 \end{pmatrix} + \begin{pmatrix} -15 & -3 & 6 \\ 9 & -6 & -21 \\ -12 & 0 & 3 \end{pmatrix} + \begin{pmatrix} -10 & 6 & 2 \\ 4 & 0 & 10 \\ 12 & 8 & 4 \end{pmatrix} =$ $= \begin{pmatrix} -10 & -13 & 6 \\ 24 & 19 & -16 \end{pmatrix} + \begin{pmatrix} -10 & 6 & 2 \\ 4 & 0 & 10 \\ 12 & 8 & 4 \end{pmatrix} = \begin{pmatrix} -20 & -7 & 8 \\ 28 & 19 & -6 \\ -5 & 18 & 27 \end{pmatrix}$ 1.1.41 A = (1 2), B= (0 -1) A-B=(1 2)-(0-1)=(1.0+2-1 1.(-1)+2-2)= =(23)B·A=(0 +1)·(1 2)=(0·1+(-1)·3 0·2+(-1)·4)= = (-3 -4) 1.1.42 A=(1-2 3 0), B= colon(5,-3,-4,1) A.B=(1-2 3 0).colon(5,-3,-4,1)= =(1.5+(-2).(-3)+3.(-4)+0.1)=(-1)

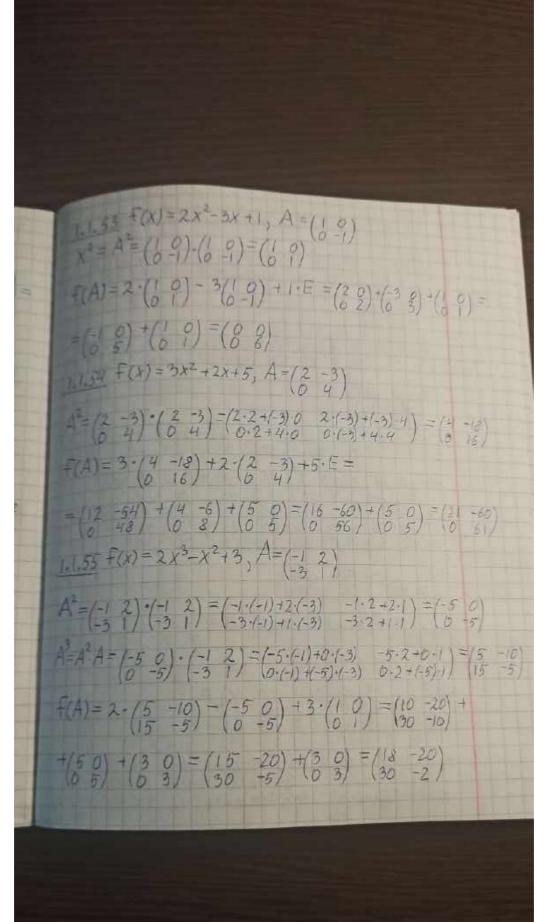
3. A = colon(5, -3, -4, 1) - (1 -2 3 1.1.45 A=(2 0 3), B=colon(-4,-3,5) A-B=(2 0 3) · Colon(-4,-3,5)=(2·(4)+0·(-3)+3·5)=(2) By Azra - He cyngermlyem 1.144 A = (3 5 7), B = (2 4) A-B= (3-2+5.(-3)+(-1).5 3.4+5.0+(-1).1) = (-14 $6 \cdot A = \begin{pmatrix} 2 & 4 \\ -3 & 0 \end{pmatrix} \cdot \begin{pmatrix} 3 & 5 & -1 \\ 2 & -2 & 0 \end{pmatrix} =$ 1.1.45 $A = \begin{pmatrix} -2 & 3 & 1 \\ 5 & 4 & 0 \\ 2 & -1 & -5 \end{pmatrix}$ $B = \begin{pmatrix} 1 & -2 & -3 \\ 0 & -3 & 1 \\ 4 & -4 & 5 \end{pmatrix}$ $A \cdot B = \begin{pmatrix} -2 & 3 & 1 \\ 5 & 4 & 0 \\ 7 & -1 & -5 \end{pmatrix} \cdot \begin{pmatrix} 1 & -2 & -3 \\ 0 & -3 & 1 \\ 4 & -4 & 5 \end{pmatrix} =$

= (-2-1+3-0+1-4 -2-(-2)+3-(-3)+1-(-4) -2-(-3)+3-)+1-5 5-1+4-0+0-4 5-(-2)+4-(-3)+(-6) 5-(-3)+4-1+0-5 2-1+(-1)-0+(-5)-4 2-(-2)+(-1)-(-3)+(-5)-(-4) 2-(-5)+(-1)-1+(-5)-5 B. A = (1 -2 -3) · (-2 3 1) = = (1.4(-2)+(-2).5+(-3).2 1.3.4(-2).4+(-3).4-1) [.1+(-2).0+(-3).(-5)] = (0.7-2)+(-3).5+1.2 0.3+(-4).4+1.(-1) 0.1+(-5).0+1.(-5) (4.7-2)+(-4).5+5.2 4.3+(-4).4+6.(+) 4.1+(-4).0+6.(+5) 1.1.46 A=(1-1), B=(20), C=(3-1) $(AB) \cdot C = ((1-1)\cdot (20))\cdot (3-1) =$ $= (1 \cdot 2 + (-1) \cdot (-3) \quad 1 \cdot 0 + (-1) \cdot 1) \cdot (3 - 1) = (-1 \cdot 2 + 1) \cdot (-3) \quad -1 \cdot 0 + (-1) \cdot 1 \quad (2 \cdot 3) = (-1 \cdot 2 \cdot 3) = (= \begin{pmatrix} 5 & -1 \end{pmatrix} \cdot \begin{pmatrix} 3 & +1 \end{pmatrix} = \begin{pmatrix} 5 \cdot 3 + (-1) \cdot 2 & 5 \cdot (-1) + (-1) \cdot 3 \\ -5 \cdot 3 + 1 \cdot 2 & -5 \cdot (-1) + 1 \cdot 3 \end{pmatrix}$ $= \begin{pmatrix} 13 & -8 \\ -13 & 8 \end{pmatrix}$ A·(BC)=(1 -1)·((2 0)·(3 -1))=

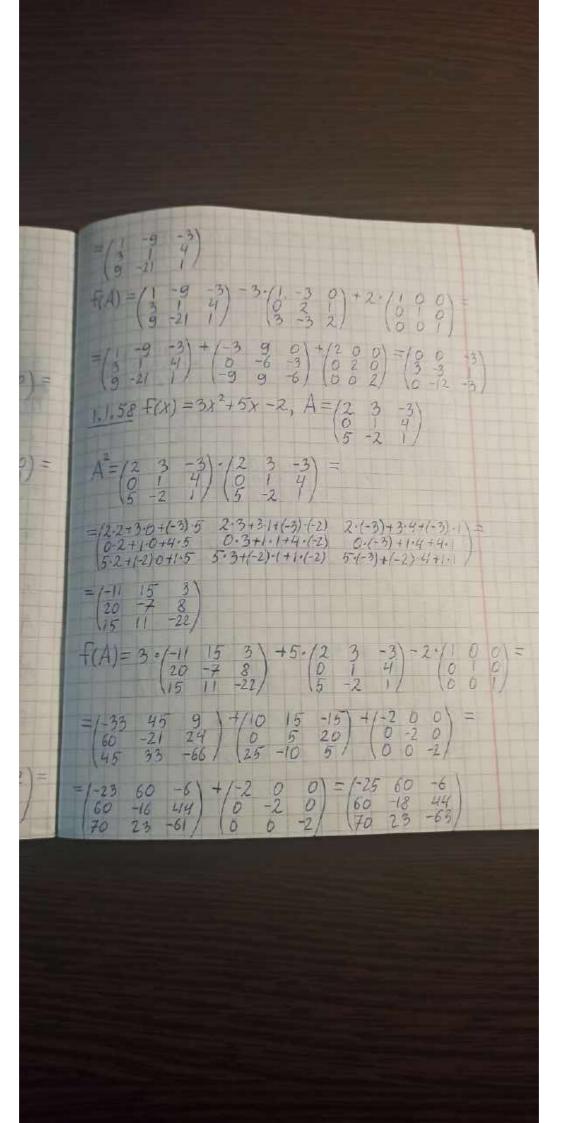
= (17) (3:3+0.2 3:6-17+0.3) = (4-1)-(6,-3) -11-6+(-1)-(-7) 1-(-2) +(-1)-6) = (3 -8) J. 47 A=(1 3), B=(-5 3), C=(1 3) $(AB) \cdot C = (\begin{pmatrix} 1 & 3 \\ 2 & 5 \end{pmatrix}) \cdot \begin{pmatrix} -5 & 3 \\ 2 & -1 \end{pmatrix}) \cdot \begin{pmatrix} 1 & 3 \\ 2 & 5 \end{pmatrix} =$ $= \begin{pmatrix} 1 & (-5) + 3 & 2 & (-3 + 3 & (-1)) \\ (-5) + 5 & 2 & 2 & 3 + 5 & (-1) \end{pmatrix} \cdot \begin{pmatrix} 1 & 3 \\ 2 & 5 \end{pmatrix} = \begin{pmatrix} 1 & 0 \\ 6 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 & 3 \\ 2 & 5 \end{pmatrix} = \begin{pmatrix} 1 & 3 \\ 2 & 5 \end{pmatrix}$ A·(B·()=(1 3)·((-5 3)·(1 3))=[no colog access]= $= (A - B) \cdot C = \begin{pmatrix} 1 & 3 \\ 2 & 5 \end{pmatrix}$ 1.1.48 $A = (1-3), B = \begin{pmatrix} -3 & 2 & 0 \\ -2 & 5 & -1 \end{pmatrix}, C = \begin{pmatrix} -2 & 4 & -3 & 0 \\ 0 & 2 & 5 & -2 \end{pmatrix}$ $(A \cdot B) \cdot C = ((1 - 3) \cdot (-3 2 0)) \cdot (-2 4 -3 0) = (2 5 -2)$ = (1-(-3)+(-3)-(-2) 1-2+(-3)-5 +1-0+(-3)-(-1))- $\begin{pmatrix} -2 & 4 & -3 & 0 \\ 0 & 2 & 5 & -2 \\ 3 & -1 & 2 & 4 \end{pmatrix} = \begin{pmatrix} 3 & -13 & 3 \end{pmatrix} \cdot \begin{pmatrix} -2 & 41 & -3 & 0 \\ 0 & 2 & 5 & -2 \\ 3 & -1 & 2 & 4 \end{pmatrix} =$ =(3-(-2)+(-13)-0+3.3 3.4+(-13).2+3.(-1) 3.(-3)+(-13).5+3.2 3.0+(-13)(-2) +3.4)=(3-17-68 38)

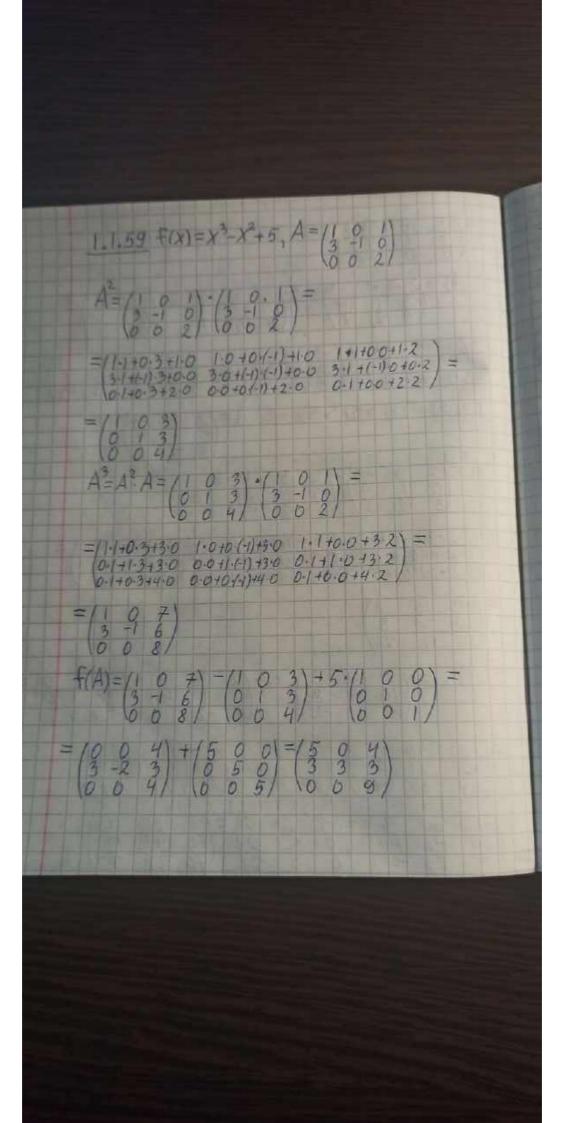
A. (BC) = [acc-mc] = (AB). C=(3-17-68 38) 1.1.49 A=(-5 0 3), B=(3 0), C=(3) $(AB) C = \begin{pmatrix} -5 & 0 & 3 \\ 4 & 3 & 2 \end{pmatrix} \cdot \begin{pmatrix} 3 & 0 \\ -2 & 1 \\ 4 & 3 \end{pmatrix} \cdot \begin{pmatrix} -2 \\ 3 \end{pmatrix} =$ $\begin{pmatrix} -5 \cdot 3 + 0 \cdot (-2) + 3 \cdot 4 & -5 \cdot 0 + 0 \cdot 1 + 3 \cdot 3 \\ 4 \cdot 3 + 1 \cdot (-2) + (-1) \cdot 4 & 4 \cdot 0 + 1 \cdot 1 + (-1) \cdot 3 \\ 2 \cdot 3 + (-3) \cdot (-2) + 2 \cdot 4 & 2 \cdot 0 + (-3) \cdot 1 + 2 \cdot 3 \\ 1 \cdot 3 + 5 \cdot (-2) + 3 \cdot 4 & 1 \cdot 0 + 5 \cdot 1 + 3 \cdot 3 \end{pmatrix} = \begin{pmatrix} -2 \\ 3 \end{pmatrix}$ A-(BC) = [acc-ms] = (AB)·C= (33)
(-18)
(-31)
(32) 1.1.50 A=(1) A=? $A^{2} = \begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix}^{2} = \begin{pmatrix} 1 & 1+1 & 0 & 1 & 1+1 & 1 \\ 0 & 1+1 & 0 & 0 & 1+1 & 1 \end{pmatrix} = \begin{pmatrix} 1 & 2 \\ 0 & 1 \end{pmatrix}$ $A^{3} = A^{2} \cdot A = \begin{pmatrix} 1 & 2 \\ 0 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix} = \begin{pmatrix} 1 \cdot 1 + 2 \cdot 0 & 1 \cdot 1 + 2 \cdot 1 \\ 0 \cdot 1 + 1 \cdot 0 & 0 \cdot 1 + 1 \cdot 1 \end{pmatrix} = \begin{pmatrix} 1 & 3 \\ 0 & 1 \end{pmatrix}$ D-me, emo An= (1 h)





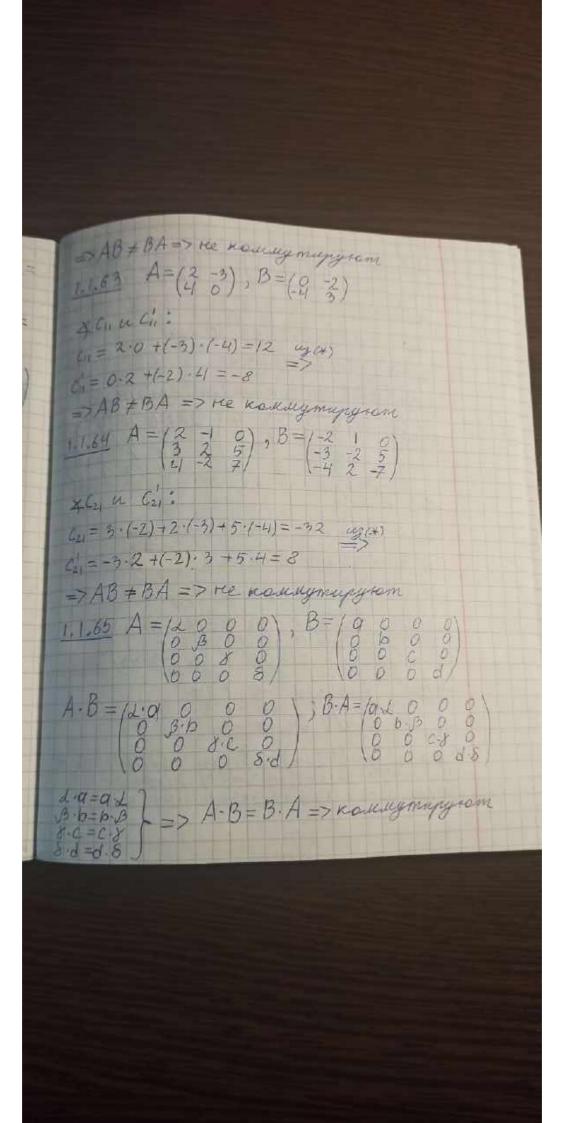
1.1.56 $F(x) = 4x^3 - 2x^2 + 3x - 2$, $A = \begin{pmatrix} -2 & 3 \\ 1 & 0 \end{pmatrix}$ $A^{2} = \begin{pmatrix} -2 & 3 \\ 1 & 6 \end{pmatrix} \cdot \begin{pmatrix} -2 & 3 \\ 1 & 6 \end{pmatrix} = \begin{pmatrix} -2 & (-2) + 3 \cdot 1 \\ 1 \cdot (-2) + 0 \cdot 1 \end{pmatrix} = \begin{pmatrix} -2 \cdot 3 + 3 \cdot 0 \\ 1 \cdot 3 + 0 \cdot 0 \end{pmatrix} = \begin{pmatrix} -2 \cdot 3 + 3 \cdot 0 \\ 1 \cdot 3 + 0 \cdot 0 \end{pmatrix}$ $A^{8} = A^{2} A = \begin{pmatrix} 7 & -6 \\ -2 & 3 \end{pmatrix} \cdot \begin{pmatrix} -2 & 3 \\ -2 & (-2) + 3 \cdot l \end{pmatrix} = \begin{pmatrix} 7 \cdot (-2) + (-6) \cdot l & 7 \cdot 3 + (-6) \cdot 0 \\ -2 \cdot (-2) + 3 \cdot l & -2 \cdot 3 + 3 \cdot 0 \end{pmatrix}$ = (-20 21) +(A)=4.(-20 21)-2.(7 -6)+3.(-2 3)-2.(10)= $= \begin{pmatrix} -80 & 84 \end{pmatrix} + \begin{pmatrix} -14 & 12 \end{pmatrix} + \begin{pmatrix} -6 & 9 \end{pmatrix} + \begin{pmatrix} -2 & 0 \end{pmatrix} = \begin{pmatrix} 28 & -24 \end{pmatrix} + \begin{pmatrix} -44 & 12 \end{pmatrix} + \begin{pmatrix} -6 & 9 \end{pmatrix} + \begin{pmatrix} -2 & 0 \end{pmatrix} = \begin{pmatrix} -2 & 0 \end{pmatrix}$ $= \begin{pmatrix} -94 & 96 \end{pmatrix} + \begin{pmatrix} -6 & 9 \end{pmatrix} + \begin{pmatrix} -2 & 0 \end{pmatrix} = \begin{pmatrix} -100 & 105 \end{pmatrix} + \begin{pmatrix} -32 & -30 \end{pmatrix}$ +(-2 0) = (-102 105)1.1.57 $f(x) = x^2 + 3x + 2$, $A = \begin{pmatrix} 1 & -3 & 0 \\ 0 & 2 & 1 \\ 3 & -3 & 2 \end{pmatrix}$ $A^{2} = \begin{pmatrix} 1 & -3 & 0 \\ 0 & 2 & 1 \\ 3 & -3 & 2 \end{pmatrix} \cdot \begin{pmatrix} 1 & -3 & 0 \\ 0 & 2 & 1 \\ 3 & -3 & 2 \end{pmatrix} =$ $= \begin{pmatrix} 1 \cdot 1 + (+3) \cdot 0 + 0 \cdot 3 & 1 \cdot (-3) + (-3) \cdot 2 + 0 \cdot (-3) & 1 \cdot 0 + (-3) \cdot 1 + 0 \cdot 2 \\ 0 \cdot 1 + 2 \cdot 0 + 1 \cdot 3 & 0 \cdot (-3) + 2 \cdot 2 + 1 \cdot (-3) & 0 \cdot 0 + 2 \cdot 1 + 1 \cdot 2 \\ 3 \cdot 1 + (-3) \cdot 0 + 2 \cdot 3 & 3 \cdot (-3) + (-3) \cdot 2 + 2 \cdot (-3) & 3 \cdot 0 + (-3) \cdot 1 + 2 \cdot 2 \end{pmatrix}$

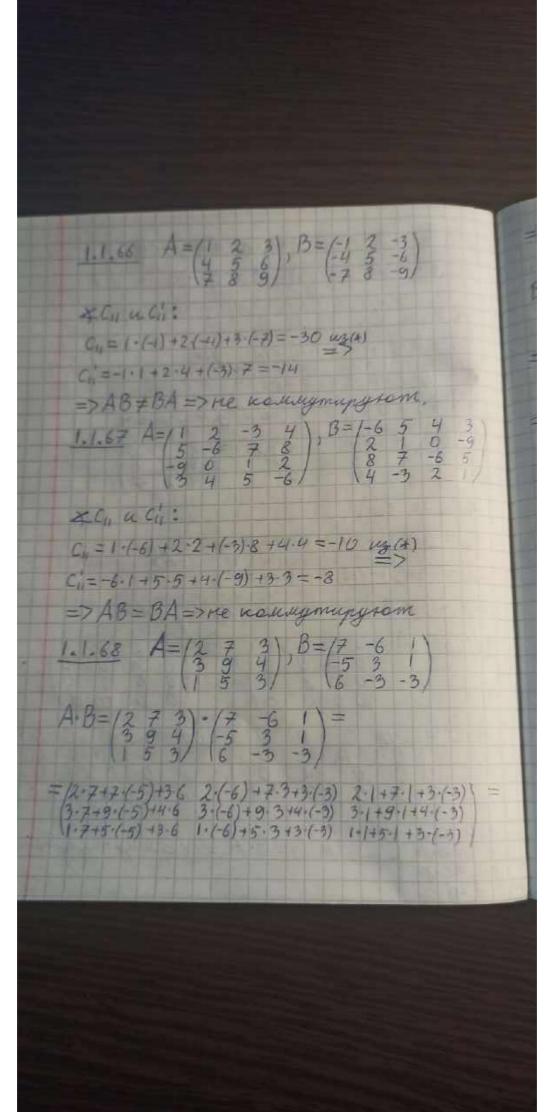


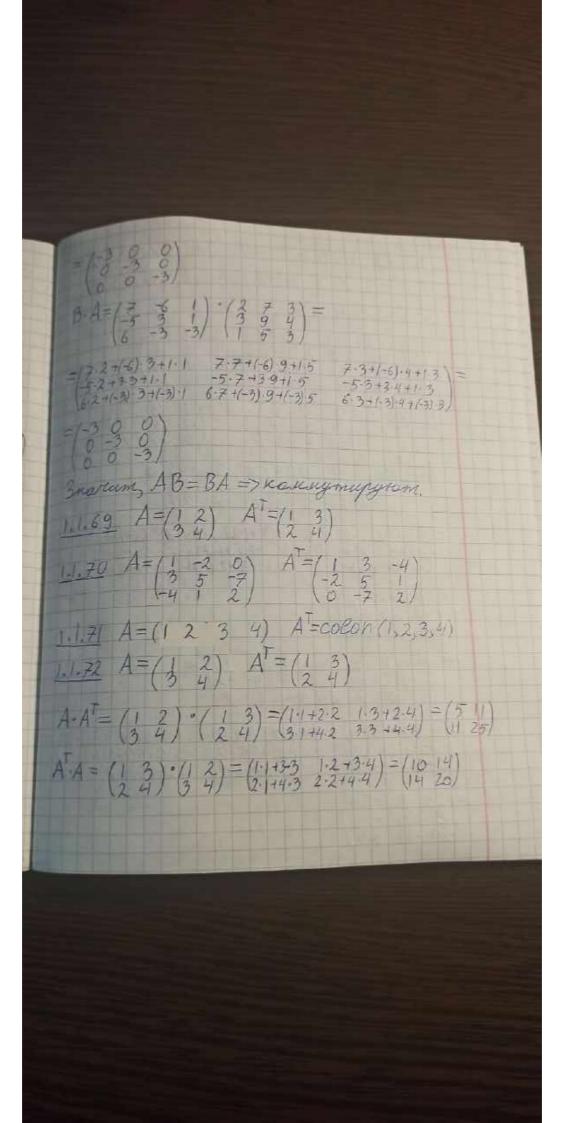


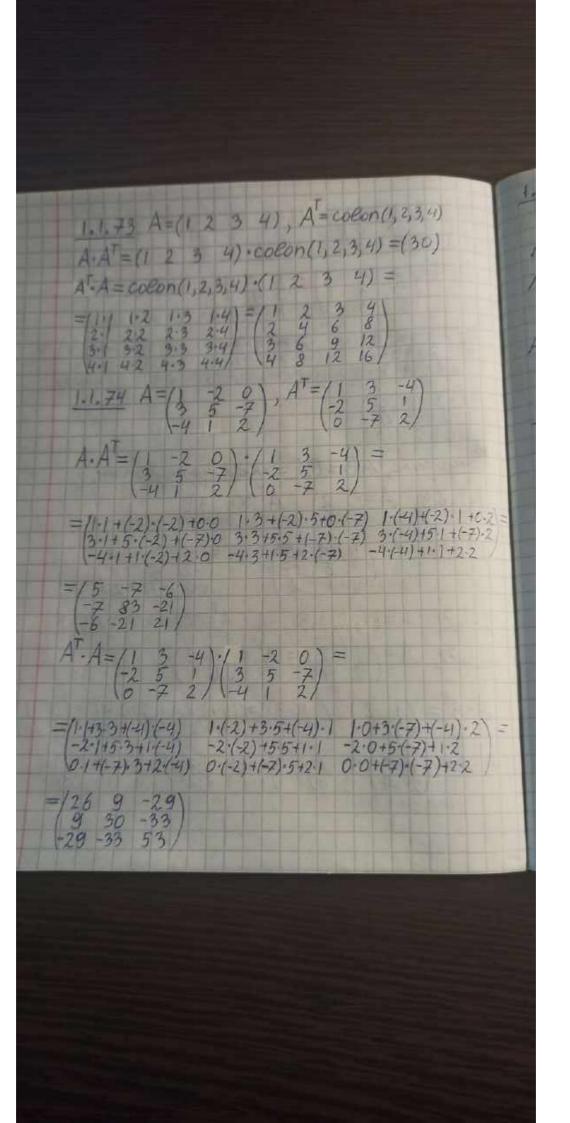
1.1.60 $f(x) = 2x^3 - x^2 + 3x - 2$, $A = \begin{pmatrix} 2 & -3 & 4 \\ 0 & 5 & -1 \\ 2 & 7 & 3 \end{pmatrix}$ A = (2 -3 4) · (2 -3 4) = [1.2+(-3) 0+4-(-2) 2·(-3)+(-3)·5+4·(-) 2·(-4)+(-3)·(-1)+4·3 [2.4+(-4)·(-2) 0·(-3)·+5·5+(-1)·(-1) 0·(+5·(-)+(-1) 3 [2.4+(-1)·0+3·(-2) -2·(-3)+(-1)·5+3·(-1) -2·(+1·-)/(-1)+3·3 $A = \begin{pmatrix} -4 & -25 & 23 \\ 2 & 26 & -8 \\ -10 & -2 & 2 \end{pmatrix} \cdot \begin{pmatrix} 2 & -3 & 4 \\ 0 & 5 & -1 \\ -2 & -1 & 3 \end{pmatrix} =$ 2-2+(-25)-0+23-(-2) -4-(-3)+(-25)-5+23-(-1) -4-4-1-1-(-1-2-5)
2-2+26-0+(-8)-(-2) 2-(-3)+26-5+(-8)-(-1) 2+4-26-1-1-3-5
(-10-2+(-2)-0-42-(-2) -10-(-3)+(-2)-5+2-(-1) -10-4-(-2)-1-2-5 = (-54 -136 78 20 132 -42 -24 18 -32

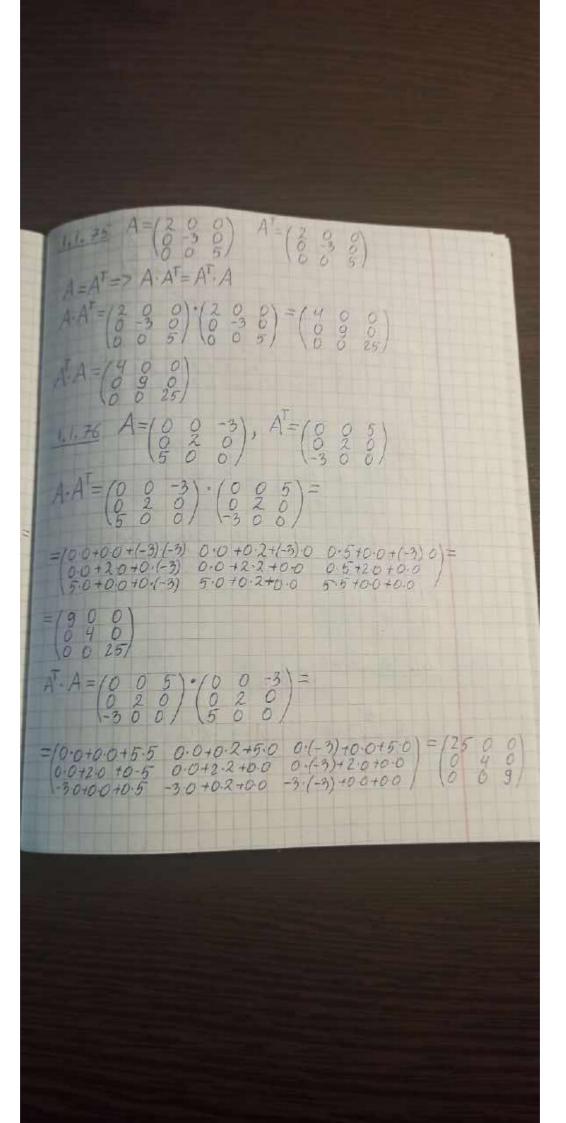
+ (4 25 -23) + (6 -9 12) + (-2 0 0) $= \begin{pmatrix} -104 & -247 & 133 \\ 38 & 238 & -76 \\ -38 & 38 & -66 \end{pmatrix} + \begin{pmatrix} 6 & -9 & 12 \\ 0 & 15 & -3 \\ -6 & -3 & 9 \end{pmatrix} + \begin{pmatrix} -2 & 0 & 0 \\ 0 & 0 & -2 \\ 0 & 0 & -2 \end{pmatrix} = \begin{pmatrix} -2 & 0 & 0 \\ 0 & 0 & -2 \\ 0 & 0 & -2 \end{pmatrix}$ 1.1.61 A=(1 2 3), B=colon(4,5,6) A1x3 · B3x1 = C1x1 B3x1 - A1x3 - C3x3 Manquerya 1x1 + manquere 3x3 => => HE KENLUYMUPYSOM 1.1.62 A=(1 2), B=(-5 3) (] A. B= C => 24-m = Cis (*) - B. A=C'=> 3d-m=C' LJAB=BA => HE,jica = Cij 4 C11 U C1: $C_{11} = 1 \cdot (-5) + 2 \cdot 2 = -5 + 4 = -1$ (-5)C' = -5.1+3.3=-5+9=4

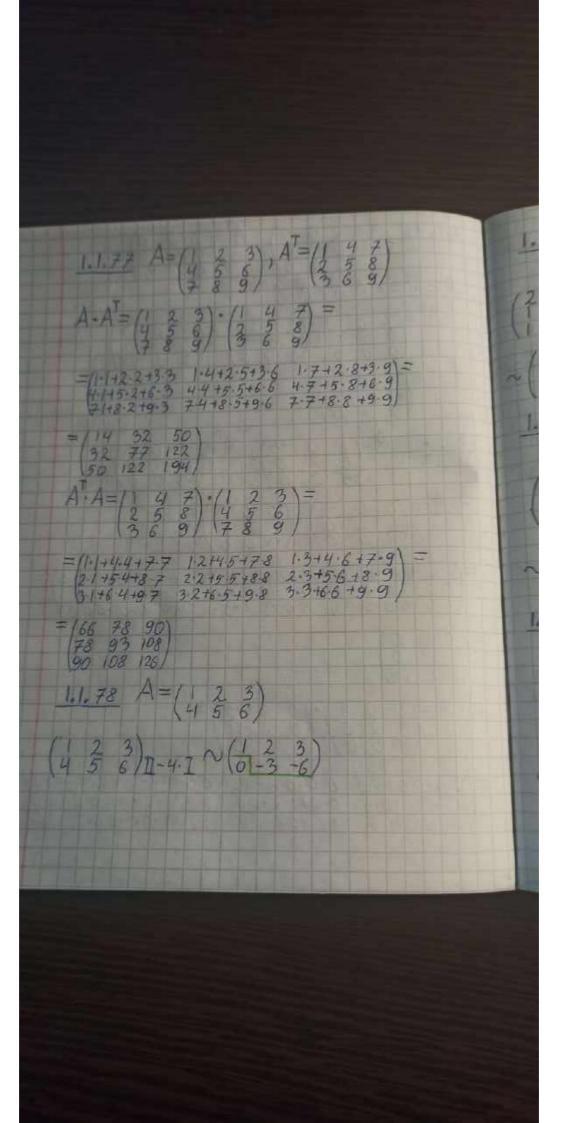












1.1.79 A= (2-1 3) (2 -1 3) I ↔ I ~ (2 -1 3) I-21 ~ 1.1.80 A=(1 -2 3 1) $\begin{pmatrix} 1 & -2 & 3 & 1 \\ 2 & -4 & 2 \end{pmatrix} \underbrace{I - 3I}_{-5I} \sim \begin{pmatrix} 1 & -2 & 3 & 1 \\ 0 & 8 & -13 & -1 \end{pmatrix} \underbrace{I - 7}_{-1}$ N (01-5-10 5 -15)

