Homework 13, Section 2.4; 1, 4, 5, 10, 12, 15, 19, 20

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Homework

1.

$$\begin{bmatrix} A & B \\ EA + C & EB + D \end{bmatrix}$$

4.

$$\begin{bmatrix} W & X \\ -EW + Y & -EX + Z \end{bmatrix}$$

5.

$Y = B^{-1}A, X = -B^{-1}A, Z = C$

10.

$Q = -B + DA, P = -A, R = -D$

12. A)

False. Both BA and AB are defined, but they have different dimensions. $AB = \begin{bmatrix} A_1 B_1 & A_1 B_2 \\ A_2 B_1 & A_2 B_2 \end{bmatrix}$

12. B)

False. R^T and Q^T have to be switched for it to be correct.

15.

$G_{k+1} = G_k + X_k + 1X_{k+1}^T$

19.

$W(s) = I = C(A - sI)^{-}1B$

20.

The compliment is $I_m - C(A - BC - sI_n)^{-1}$