

General Case

Inversion Lemma:

$$(A + BCD)^{-1} = A^{-1} - A^{-1}B(C^{-1} + D^{-1}A^{-1}B)^{-1}D^{-1}A^{-1}$$

$$LHS (A + BCD) = I$$

$$RHS (A + BCD) = [A^{-1} - A^{-1}B(C^{-1} + D^{-1}A^{-1}B)^{-1}D^{-1}] (A + BCD)$$

$$= I + A^{-1}BCD - A^{-1}B(C^{-1} + D^{-1}A^{-1}B)^{-1}D^{-1}$$

$$- A^{-1}B(C^{-1} + D^{-1}A^{-1}B)^{-1}D^{-1}A^{-1}BCD$$

$$(RHS)(A + BCD) = I + A^{-1}B \left\{ I - (C^{-1} + D^{-1}A^{-1}B)^{-1}C^{-1} \right.$$

$$\left. - (C^{-1} + D^{-1}A^{-1}B)^{-1}D^{-1}A^{-1}B \right\} CD$$

$$RHS (A + BCD) = I + A^{-1}B \left\{ (C^{-1} + D^{-1}A^{-1}B)^{-1} \left[C^{-1} + D^{-1}A^{-1}B - C^{-1} \right. \right.$$

$$\left. \left. - D^{-1}A^{-1}B \right] \right\} CD$$

$\Rightarrow A_{inv}$ is a valid Left inverse

provided A & C are non-singular

and $(C^{-1} + D^{-1}A^{-1}B)^{-1}$ exists

500 SHEETS, FILLER, 5 SQUARE
50 SHEETS, CLASSIC, 5 SQUARE
100 SHEETS, EYE LEVEL, 5 SQUARE
200 SHEETS, EYE LEVEL, 5 SQUARE
100 RECYCLED, WHITE, 5 SQUARE
13-782 42-381 42-382 42-389 42-392 42-399
Made in U.S.A.

