$U = \{1, 2, 3, 4, 5, 6, 7, 8\}$

$A = \{4, 5, 6, 7\}$

$C = \{1, 8\}$

$\bar{A} \cup \bar{C}$ = The Union of Complement A and Complement B.

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Q 28

First we find $\bar{A}$ = Universal set - All elements in A:

$$\bar{A} = \{1, 2, 3, 8\}$$

Then Find $\bar{C}$ = Universal set - All elements of C

$$\bar{C} = \{2, 3, 4, 5, 6, 7\}$$

Then the Union $\bar{A} \cup \bar{C}$ will have all the elements of both $\bar{A}$ and $\bar{C}$, therefore:

$$\boxed{\bar{A} \cup \bar{C} = \{1, 2, 3, 4, 5, 6, 7, 8\}}$$

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Q 16

$$m\begin{bmatrix} 3 & 0 \\ 2 & -1 \\ 0 & -2 \end{bmatrix} - \begin{bmatrix} -4 & 0 & 2 \\ 3 & 1 & 5 \\ 1 & 2 & 1 \end{bmatrix} m$$

3×2 $\qquad$ 3×3

* Not possible since m, x are not the same dimensions

Imagine instead:

Both dimensions 3×2

$$n\begin{bmatrix} 3 & 0 \\ 2 & -1 \\ 0 & -2 \end{bmatrix} - \begin{bmatrix} -4 & 0 \\ 3 & 1 \\ 1 & 2 \end{bmatrix} n$$

3×2 $\qquad$ 3×2

$$= \begin{bmatrix} 3-(-4) & 0-0 \\ 2-3 & (-1)-1 \\ 0-1 & -2-2 \end{bmatrix} = \boxed{\begin{bmatrix} 7 & 0 \\ -1 & -2 \\ -1 & -4 \end{bmatrix}}$$

Hilary