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Assignment : 1

Question 3

The constraints for the attached miniZinc program:

- Each vulture (v) allocated 12 in damage where v is the number of vultures.
- Each tank (t) allocated 16 in damage where t is the number of tanks.
- Given that Factory 1 can create $52t$ and $38v$ in 480 hours.
- Given that Factory 2 can create $42t$ and $23v$ in 720 hours.

It was calculated that each factory creates one type of upgrade:

- Factory 1 was calculated to create 12 tanks in the allocated time to allow maximum damage.
- Factory 2 was calculated to create 31 vultures in the allocated time to allow maximum damage.

In conclusion, The Emperor should produce both upgraded units. Factory 1 should only produce tanks (12) and factory 2 should only produce vultures (31). This best utilizes the factories and their given times.