**1. How does DNF differ from CNF? Transform the following well-formed formula into DNF:**

**1. (P→ (~ (Q→R)))**

**2. (P→Q) →~R**

The wff is defined as disjunctive normal form if and only if DNF has disjunction between statements and same rule follows for CNF. DNF behaves opposite to CNF, try to proof with truth table for practice.

**1. Solution to (P→ (~ (Q→R)))**

Step 1: Remove the logical operator

=> (~P v (~ (Q→R)))

=> (~P v (~ (~Q v R)))

Step 2: Remove the negations

=> (~P v (~ (~Q) ᴧ (~R)))

=> (~P v (Q ᴧ ~R))

We have got the required form **(~P v (Q ᴧ ~R))**

**2. Try to solve second question for practice**

**2. Transform the following well-formed formula into CNF:**

**1. (~A ᴧ B) v (A ᴧ ~B)**

**2. (A→B)→C**

**1. Solution to (~A ᴧ B) v (A ᴧ ~B)**

=> ((~A ᴧ B) v A) ᴧ ((A ᴧ ~B) v ~B)

=> ((A v ~A) ᴧ (A v B)) ᴧ ((~B v ~A) ᴧ (~B v B))

=> (TRUE ᴧ (A v B)) ᴧ ((~B v ~A) ᴧ TRUE)

=> (A v B) v (~B v ~A)

**2. Try to solve second question for practice**