Logic Study Guide: Truth Trees

- Using truth trees, determine whether the folowing arguments are valid or invalid

1. ~M→Q, ~T→Q, ~Q ↔ ~Y, ~Y ∴ M ⬝ T

2. ~(A→B), A→C, ~B ↔ D ∴ D→~C

3. ~E ∴~F □ ~E

4. (G □ H) ⬝ (G □ I) ∴ G ⬝ (H □ I)

5. (K→~N) ↔ ~P, P ∴ ~K

6. ~(W ⬩ Z)⟶~S ∴ ~[(W ⬩ Z)⟶S]

7. Z □ T, Z⟶M, T⟶~J, ~L ∴ (M □ ~J) ⬩ ~L

8. ~(D↔N), ~D⟶O, N⟶S ∴ O • S

9. (V↔Z)⟶R, ~R ∴ ~V □ Z

10. ~(U↔M) ∴ ~U⟶~M

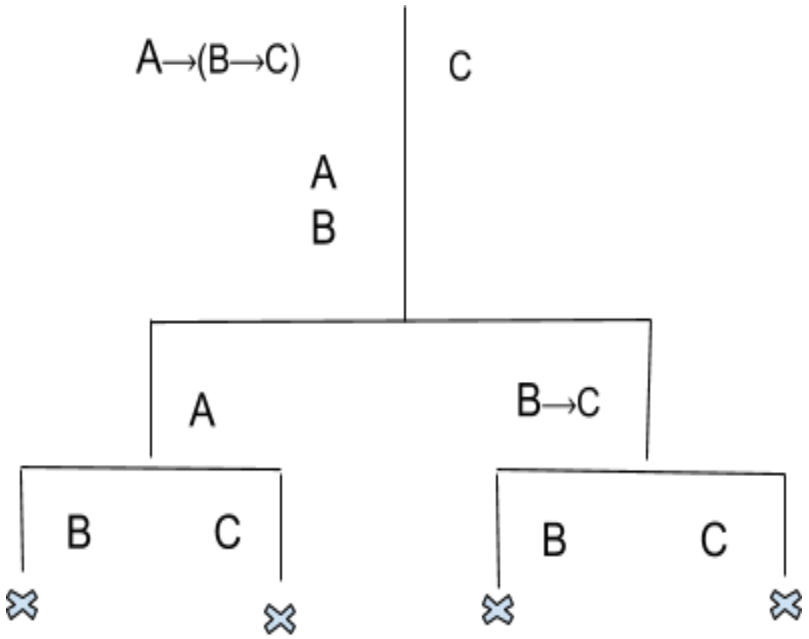
- Answer the following questions

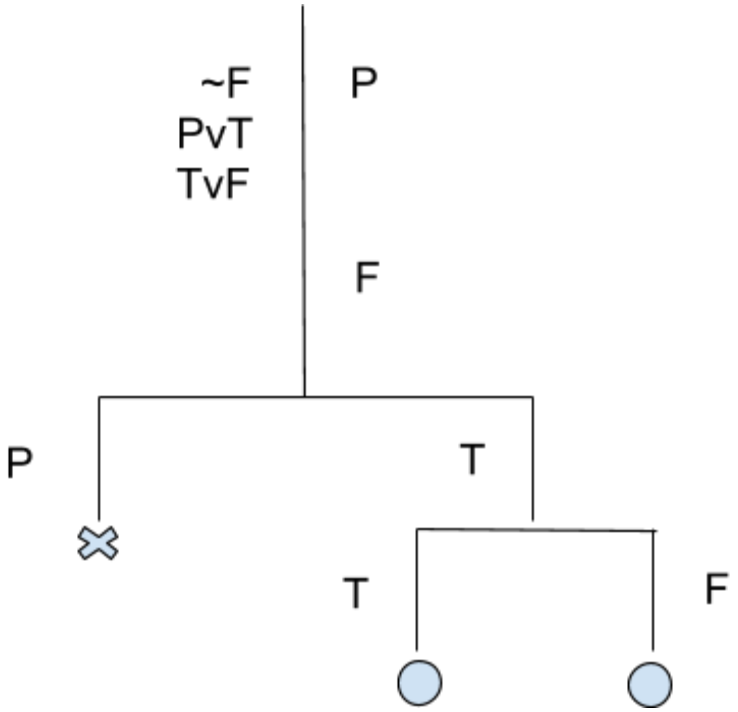
1. How do you know, when using truth trees, if an argument is valid?

2. How do you know, when using truth trees, if an argument is invalid?

3. When is it necessary to branch out when using truth trees?

- Identify the incorrect step(s) in each truth tree and explain why it is incorrect.




~F
PvT
TvF
P
F
P
T
T
F