1.	Transfer Following Statements in Logical equivalence using Quantfiers. **a)** "None of my friends are perfect**". ~Ex(f(x)^p(x))=for all x (~f(x)v~p(x))=for all(f(x)->~p(x))** b) "Some Real numbers are rational". **Ex(R(x)^T(x))** c) "Not all rainy days are cold" **Ex(R(x)^~C(x))** d) "Gold and Silver ornaments are precious." **∀x((G(x)∨S(x))→P(x))** e) "Every clever student is successful" **(∀x)((C(x) ^ S(x)) → A(x))**
2.	Negate following and represent them in both English and symbolic form a) All good students study hard. b) There is a triangle whose sum of angles ≠ 180◦ .
3.	Verify Following argument is valid or not, using rules of inference. **a)** {p→q, q→r, p} are the premises with conclusion r. **valid** b) { p→q, q→r, ¬p} are the premises with conclusion ¬r. **not valid** c) The conclusion ¬p follows from {p→q,q→r,¬r} premises. **valid** d) {a v b, b→c, a→d, ¬d}⟶c **valid**
4.	Check the following arguments are valid or not? a) S1: If today is David's b'day then today is 2nd april. S2: Today is 2nd April. ∴ Today is David's B'day. **Not valid** b) S1: If Canada is a country then London is a city. S2: London is not a city. Conclusion: Canada is a country. **Not valid**
5.	Check the argument is valid or not? If today is Tuesday, then I have a test in computer science or a test in Economics. If my Economic professor is sick, then I will not have a test in economics. Today is Tuesday & my economics professor is sick, therefore, I have a test in computer science.