

1.	Rewrite the statement by finding its converse, inverse, and contrapositive: "A plant grows whenever there is sunlight."
2.	Express the following statements using predicates and quantifiers (Domains are all animals): i) All animals in the zoo are well-fed. ii) There is an animal in the zoo that is not nocturnal.
3.	<p>Let X, Y, and Z be the propositions:</p> <ul style="list-style-type: none"> • X: You pass the midterm exam. • Y: You complete all the assignments. • Z: You pass the course. <p>Write these propositions using x, y, and z and logical connectives (including negations):</p> <p>a. You pass the course, but you do not complete all the assignments.</p> <p>b. You pass the midterm, you complete all the assignments, and you pass the course.</p> <p>c. To pass the course, it is necessary for you to pass the midterm exam.</p> <p>d. You pass the midterm, but you don't complete all the assignments; nevertheless, you pass the course.</p> <p>e. Passing the midterm and completing all assignments is sufficient for passing the course.</p>
4.	Find the DNF of following expression $p \vee (q \rightarrow \neg r)$
5.	Show that $p \vee (q \wedge r)$ and $(p \vee q) \wedge (p \vee r)$ are logically equivalent.