

Р	Q	R	A = P AND Q	B = NOT P AND R	A OR B	Q OR R	Whole Statement
0	0	0	0	0	0	0	1
0	0	1	0	1	1	1	1
0	1	0	0	0	0	1	1
0	1	1	0	1	1	1	1
1	0	0	0	0	0	0	1
1	0	1	0	0	0	1	1
1	1	0	1	0	1	1	1
1	1	1	1	0	1	1	1

- 9. Translate the following problem into symbolic logic in order to prove the result:
- a. All men are mortal
- b. Socrates is a man
- c. Therefore, Socrates is mortal

 $\forall (m \epsilon Men) \epsilon Mortal$ Socrates  $\epsilon$  Men ...Socrates  $\epsilon$  Mortal

10. The symbol "p" means "powerset". Write out the full cartesian product:  $\{a, b\} \times P\{a, b\}$ 

$$P\{a, b\} = \{(),(a), (b), (a, b)\}$$
 (-4) A cross product produces a set of ordered pairs containing each member of the first set paired with each member of the set.

11. 40 Min, but I'm trying to learn vi and wrote the whole thing in it which made it take substantially longer.