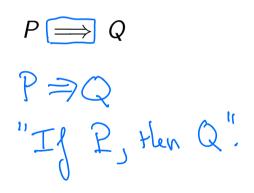
Conditional Statements

If...then...

Given statements P and Q, we can form a new statement "If P, then Q".

Symbolically



If...then..

Truth of the first statement forces truth of the second statement.

If it is raining Hen it is cloudy P: It is Raining & Ptrue force Q: It is Cloudy Q bobe true If is a number is duisible by 6 the it is duusible PQ PAQ TTFT FFFT FFFT

Alternatives

- ► If P, then Q < If you pare der final then you pare the come
- ► Q if P you pare the course if you pare the final.
- ► Q whenever P you paro the course whenever you par the final.
- ► Q, provided that P you pass the course provided that you pars the final.
- ► Whenever P, then also Q Whenever joupans the final then also you put the course.
- P is a sufficient condition for Q

more alternatives

► For Q, it is sufficient that P to prove the course of is enough to prothe find. Q is a necessary condition for P ► For P, it is necessary that Q ► Ponly if Q - pares final only if parsed course.) parsing the course "is necessary to parsing the final. A P(final) Q(cours) P=)Q

A matrix is invertible provided that its determinant is non-zero.

Q P=>Q If determinant non-zero Hen Matrix is Invertible.

An integer is divisible by 8 only if it is divisible by 4.

Being a native born citizen over the age of 35 is sufficient to be eligible to be elected president of the US.

Being over the age of 35 is necessary to be elected president of the US.