Download this PDF to your computer and go to www.livescribe.com/player On iOS, open the PDF in Livescribe+.

Direct proofs of universal statements conditional
$(\forall x \in A, P(x))$ of $\forall x \in A, P(x) \rightarrow O(x)$
(universal conditional
statement)
~~~~
A Infinite set
, · ·
Idea: Choose orbitrory member of A, use only that it is a
number of A
Transper Of Pr
Draw The sine of Gold ton and allegated a is alleg
Prove The sum of cont two even numbers is even
Def. An even number is one that can be written as ak for
Some integer K
David Mary as head has a large state of
Keerite. TX, y in the set of even numbers, X+y is even.
Rewrite & x, y in the set of even numbers, x+y is even
$\forall x, y \in \Lambda$ $P(x, y)$
2
Proof Lel x and y Dc arbitrary even numbers. 5
Since x 15 even, 1x=2k for some integer k. Similarly, y=2m for
some integer m. Now x+q = 2k 12m By substitution. Betorna,
Since x 15 even, x=2k for some integer k. Similarly, y=2m for some integer m. Now x+4 = 2k 12m by substitution. Partoring, x1y=2(k+m) Since k and in are integers, k+m is an integer
-J U
Therefore x+4 is even by definition. §
2(101)

01.08.2019 9:38a

1/8/19, 3:51 AM, 10m 23s



Direct works of manageral statements
Direct proofs of universal statements conditional
$\forall x \in A, P(x) \rightarrow O(x)$
(unisersal conditional
statement)
A: Infinite set
Idea Choose orbitrary member of A, use only that it is a member of A
member of A
Prove The sum of (an) two even numbers is even.
Def. An even number is one that can be written as ak for
Some integer K
Rewrite: $\forall x,y$ in the set of even numbers, $x+y$ is even. $\forall x \in A$ $\forall x,y \in A$ $\forall x,y \in A$ $\forall x,y \in A$ $\forall x,y \in A$
" ≠ X ∈ A P(x)
$\frac{A_{X,Y} \in \mathcal{N}}{A_{X,Y}}$
Proof Lel x and y be arbitrary even numbers. S Since x is even, x-2k for some integer k. Similarly, y=2m for
Since x is even, 1x-2k for some integer K. Similarly, y=2m for
some integer m. Now X+y = 2k+2m By substitution Poctoning, X+y = 2(k+m). Since World in ore integers, k+m is an integer.
THE SINCE ROUNDLY OF MEGES, ATALIS ON MIRES.
Therefore x+y is even by definition. 3
2(10+)