

Dr. Sarah's 3610 Project 2

Here is a consistent Minesweeper game:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	*	1	0	0	0						1	1	1	0	1	
2	1	1	0	0	0						1	*	1	0	2	
3	1	1	1	0	0						1	1	1	0	1	
4	1	*	1	0	0											
5	1	1	1	0	0											
6					0											
7	1															
8	1	2														
9																
10	0	0	0	0												
11	0	0	0													
12	1	1	1													
13											0	0	0			
14	1	1	1									2				0
15	0	0	0	0	0											1
16	0	0	0	0	0					2	3		1			1

- 1) Prove that P2 is 2.
- 2) It is hard to prove that C13 is 1, but this can be accomplished by ruling out all of the other possibilities. Set up a proof outline (I've started you off below) that contains the introduction to the proof by contradiction, all of the cases that you will contradict, and a conclusion.

To prove that C13 is 1, we will (Note: Do continue to complete the introduction.)

Case 3: $C13 > 1$ Assume for contradiction that $C13 > 1$... We have arrived at a contradiction and so C13 cannot be greater than 1. (Note: Do not fill in the details.)

- 3) Choose one of the cases from your proof outline (in 2) and fill in the proof by contradiction. If you can prove all of the cases to form a complete proof that C13 is a 1, then you will receive extra credit.
- 4) See Sibley 1.2 1a) on page 16 (and the answer in the back of the book). Choose a construction proposition that we did not complete in class and use Sketchpad to complete the construction. You may only use straight edge and compass features and additional Sketchpad features which are construction propositions that come before your proposition. Save your document and the script view as prop#.gsp (where # is the number of the Euclid proposition that you are proving) and attach it onto the WebCT forum containing just you and I. In addition, on a piece of paper, turn in the corresponding 2-column proof.
- 5) Sibley 1.2 13a on page 21.