Philosophy 1102

Instructor: Richard Johns

Problem Set 5

[7 marks for each proof, 4 marks for each world = 50 marks total]

Hand in answers to the following questions in class on Thursday, February 8.

Give either formal proofs or counter-example worlds for the following arguments. If an argument is TT con (which Qu. 5 is not), then you should do the formal proof wearing Boolean goggles, using A, B, C, D, (etc., as many as you need) in the order they first appear in the argument.

1.

| A ∨ B
| ¬B ∨ C
|——
| A ∨ C

2.

| ¬A ∧ ¬B
|——
| ¬(A ∨ B)

3.

| A ∨ B
| A ∨ C
|——
| A ∨ (B ∧ C)

4.

| Dodec(b) ∨ Cube(b)
| Small(b) ∨ Medium(b)
| ¬(Small(b) ∧ Cube(b))
|——
| Medium(b) ∧ Dodec(b)

5. (This can be formally proved, but *keep the goggles off* as it isn't TT con.) You will need =Elim.

| ¬Small(c) ∨ ¬Small(a)
| Small(a)
|——
| a ≠ c

6.

| ¬Tet(c) ∨ LeftOf(a, b)
| Cube(a) ∧ b = c
| ¬Dodec(b) ∨ (Adjoins(a, b) ∧ BackOf(a, b))
|——
| ¬SameCol(a, b) ∨ SameShape(a, b)

7.

|——
| Tet(c) ∨ ¬Tet(c)

8.

| SameRow(b, f) ∨ SameRow(c, f)
| ¬SameRow(c, f)
| FrontOf(b, f)
| ¬(FrontOf(b, f) ∧ SameRow(b, f))
|——
| Dodec(b)