Quiz 4
PHIL-205-01:Symbolic Logic

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1 Section I

Use the following symbolization key to symbolize the English sentences in FOL:
Domain: People
Hx: x is the holdout.
Mx: x has the most to gain.
Nx: x has nothing to lose.
Px: x is a politician.
m: Senator Joe Manchin
s: Senator Kyrsten Sinema

1. If Joe Manchin has the most to gain, then he's the holdout.

$$Mm \implies Hm \tag{1}$$

2. Those who have the most to gain have nothing to lose.

$$\forall x(Mx \land Nx) \tag{2}$$

3. Some holdouts have nothing to lose and not all politicians have the most to gain.

$$\exists x(Hx \land Nx) \land \neg \forall y(Py \implies My) \tag{3}$$

4. If anyone is a politician, then Kyrsten Sinema is.

$$\exists x(Px \implies Ps) \tag{4}$$

2   Section II

Using the following symbolization key to symbolize the English sentences in FOL:
Domain: People
Cxy: x confuses y
Jx: x is a journalist.
Px: x is a politician.
Wxy: x writes about y.
m: Senator Joe Manchin
s: Senator Kyrsten Sinema

1. There's a journalist who writes about Senator Kyrsten Sinema.

$$\exists x(Jx \wedge Wxs) \tag{5}$$

2. Senator Joe Manchin confuses every journalist.

$$\forall x(Jx \implies Cmx) \tag{6}$$

3. No politician is confused by Senator Kyrsten Sinema.

$$\neg\exists x(Px \wedge Cxs) \tag{7}$$

4. Every journalist is confused by someone or other. (Different people confuse different journalists.)

$$\exists x\exists y(Jx \wedge Cyx) \tag{8}$$

5. Every journalist is confused by someone. (All journalists are confused by the same person.)

$$\forall x\exists y(Jx \wedge Cyx) \tag{9}$$

6. Every journalist who writes about politicians is confused by Senator Joe Manchin.

$$\forall x\exists y((Jx \wedge Py \wedge Wxy) \implies Cmx) \tag{10}$$