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PHIL 12

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November 01, 2020

**Exercise Set #1**

**A)**

1. John is tall.

Name: *John*

Predicate: \_\_\_ *is tall*.

Adicity: \_\_\_ *is tall* is a one-place predicate.

2. John is shorter than Liz.

Names: *John, Liz*

Predicate: \_\_\_ *is shorter than* \_\_\_

Adicity: \_\_\_ *is shorter than* \_\_\_ is a two-place predicate.

3. John is shorter than Liz but taller than Vic.

Names: *John, Liz, Vic*

Predicates: \_\_\_ *is shorter than* \_\_\_, \_\_\_ *is taller than* \_\_\_

Adicity: \_\_\_ *is shorter than* \_\_\_ is a two-place predicate.

\_\_\_ *is taller than* \_\_\_ is a two-place predicate.

4. If Vic is standing between Liz and Vic, then Vic is not tall.

Names: *Vic, Liz*

Predicates: *\_\_\_ is standing between \_\_\_ and \_\_\_, \_\_\_ is not tall*

Adicity: *\_\_\_ is standing between \_\_\_ and \_\_\_* is a three-place predicate.

*\_\_\_ is not tall* is a one-place predicate.

5. If Vic is standing between Sam and Mary, then Vic is tall.

Names: *Vic, Sam, Mary*

Predicates: *\_\_\_ is standing between \_\_\_ and \_\_\_, \_\_\_ is tall*

Adicity: *\_\_\_ is standing between \_\_\_ and \_\_\_* is a three-place predicate.

*\_\_\_ is tall* is a one-place predicate.

6. Liz is taller than John and taller than Vic, except when she is standing next to Sam.

Names: *Liz, John, Vic, Sam*

Predicates: *\_\_\_ is taller than \_\_\_, \_\_\_ is standing next to \_\_\_*

Adicity: *\_\_\_ is taller than \_\_\_* is a two-place predicate.

*\_\_\_ is standing next to \_\_\_* is a two-place predicate.

7. If Liz is standing next to Vic, Sam, Mary, and John, then Liz is tall.

Names: *Liz, Vic, Sam, Mary, John*

Predicates: *\_\_\_ is standing next to \_\_\_, \_\_\_ is tall*

Adicity: *\_\_\_ is standing next to \_\_\_* is a two-place predicate.

*\_\_\_ is tall* is a one-place predicate.

## Exercise Set #2

### A)

1.  $(\forall x)(Px \vee Qx)$

Main Operator:  $\forall x$

### B)

1.  $(\exists x)(Rx \rightarrow Ga)$

Bound Variables:  $x$

Quantifiers:  $\exists x$

Scoped Variables:  $x, a$

Free Variables: None

Names:  $x$  in  $Rx$ ,  $a$  in  $Ga$

Constant Truth Table: Yes

### C)

1.  $Ra \wedge Paa$

$Ra$ : A wff. One-place predicate with a name. (i)

$Paa$ : A wff. Two-place predicate with two names. (i)

Since  $Ra$  and  $Paa$  are wffs, then  $Ra \wedge Paa$  is a wff. (iii)