

1. You are given the predicate

$gives(x, y, z)$

meaning that x gives y to z . Define the following predicates in terms of this.

- a. $receives(x, y, z)$ meaning x receives y from z
- b. $gets(x, y)$ meaning x gets y

2. You are given the following predicates.

$parent(x, y)$ meaning x is a parent of y

$male(x)$ meaning x is male

$female(x)$ meaning x is female

Define the following predicates in terms of these.

- a. $mother(x, y)$ meaning x is a (the) mother of y
- b. $son(x, y)$ meaning x is a son of y

3. Use Venn diagrams to evaluate the validity of the following syllogisms.

- a. Some A 's are not B 's.

All A 's are C 's.

Some C 's are not B 's.

- b. Some A 's are not B 's.

Some A 's are C 's.

Some C 's are not B 's.

- c. No B 's are A 's.

Some A 's are C 's.

Some C 's are not B 's.