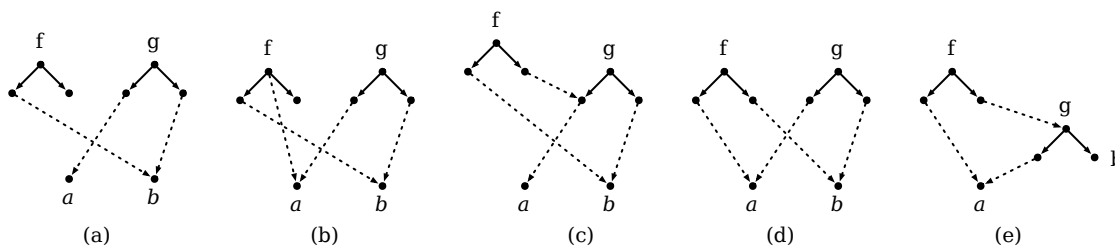
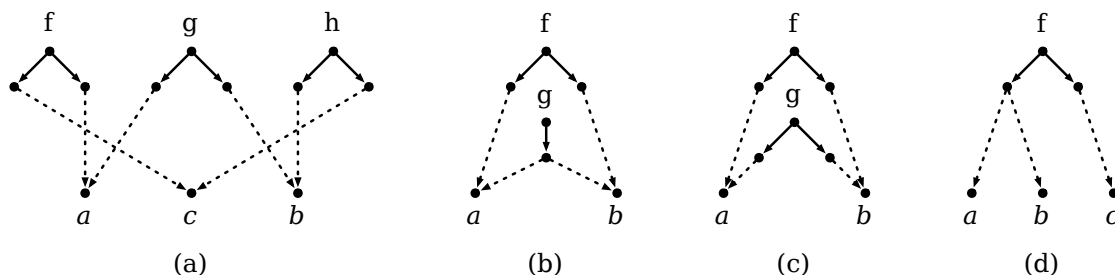


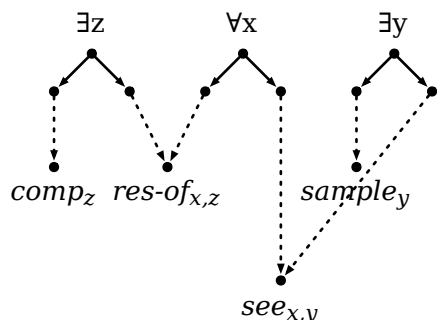
1. Which of the following graphs are (normal) dominance graph according to the definition on slide 18. (The symbols f, g, h, a, b are labels.)



2. Which of the following dominance graphs are solvable? Give at least one solved form for each solvable dominance graph. It is not necessary to explicitly compute the solved forms, it is sufficient to specify the solved form(s).



3. In the lecture, we computed one of the five (minimal) solved forms of the following normal dominance graph for the sentence "every researcher of a company saw a sample." Compute the other four (minimal) solved forms.



4. Sentence (1) is ambiguous between readings (2a), (2b), and (2c), where we use the notation " $\forall(\cdot, \cdot)$ " and " $\exists(\cdot, \cdot)$ " to represent universal and existential quantifiers.

(1) Every professor believes that a student works.

- (2) a.  $\forall x(\text{professor}(x), \text{believe}(\exists y(\text{student}(y), \text{work}(y))))$
- b.  $\forall x(\text{professor}(x), \exists y(\text{student}(y), \text{believe}(\text{work}(y))))$
- c.  $\exists y(\text{student}(y), \forall x(\text{professor}(x), \text{believe}(\text{work}(y))))$

(a) Represent readings (2a) - (2c) as trees.

(b) Give a normal dominance graph that describes these three trees.