1. Translate the following sentences into predicate logic. For compound sentences use the truth-functional connectives we employed in propositional (sentential) logic. Ignore the past tense (that is, treat all these sentences as if they were tenseless). As for the noun phrase *the sword Excalibur*, treat it as a proper name (*the sword Excalibur* = *e*). In addition, give a list of all predicates that occur in (a) through (f) indicating by using variables how many places the predicate has.

(a) Arthur was a king and Merlin was a wizard.
(b) If Arthur was a king, then Guinevere was a queen.
(c) Arthur, who was a king, possessed the sword Excalibur.
(d) Merlin did not advise Lancelot.
(e) Either Lancelot loved Guinevere or Guinevere loved Lancelot.
(f) Merlin was a wizard who advised Arthur.

2. Translate the following sentences into predicate logic, using the quantifiers ∀ and ∃, as necessary. Note which sentences, if any, allow two interpretations. As before, ignore tense. For this exercise, treat *all* like *every*.

(a) Lancelot hated all dragons.
(b) Every dragon was nervous of Lancelot.
(c) One dragon was nervous of everyone.
(d) Someone searched for the Holy Grail.
(e) Every dragon wasn’t keen on maidens.
(f) Every dragon who was keen on maidens was nervous of Lancelot.
(g) Not everyone searched for the Holy Grail.
(h) No dragon searched for Lancelot.