

Write a quantified formula for the proposition

No two distinct classes meet on the same day of the week.

Use $M(c, d)$ for “class c meets on day d ”. You may also use the equality predicate.

Solution: This proposition says that there does not exist a pair of (distinct) classes c, c' and a day d of the week when they are both held, namely

$$\text{NOT } \exists c, c', d: M(c, d) \text{ AND } M(c', d) \text{ AND } (\text{NOT } c = c').$$

Alternatively, we could say that if any two classes meet on the same day d , then they must be the same class.

$$\forall c, c', d: (M(c, d) \text{ AND } M(c', d)) \longrightarrow c = c'.$$