Goals:
- Translate quantified predicates
- Apply de Morgan's rules

No sets on quiz.

Quiz available after class.

LUNCH TODAY: WHAT I DID THIS SUMMER!

$(m|n \ \equiv m$ divides $n)$ $(M(x, y) \ \equiv x$ is y's parent, S is set of all people$)$

- $B(g) \equiv g$ has a factor greater than 10.

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- $B(g) \equiv g$ has a factor greater than 10.

$$\exists t \in \mathbb{N}: t|g \wedge t > 10$$

$(m|n \equiv m$ divides $n)$ $(M(x,y) \equiv x$ is y's parent, S is set of all people)

- $R(r,p) \equiv$ every natural number less than r divides p

- $W(a,b) \equiv a$ and b have the same parent
  - Hint: Use M
- $K \equiv$ every person who has a sibling or half sibling also has a child
  - Hint: Use W

- $R(r, p) \equiv$ every natural number less than r divides p
  - $\forall k \in \mathbb{N}, k < r \rightarrow k | p$
- $W(a, b) \equiv$ a and b both have the same parent
  - $\exists p \in S: M(p, a) \land M(p, b)$
- $K \equiv$ every person who has a sibling or half sibling also has a child
  - Hint: Use W
  - $\forall x \in S, \left(\exists y \in S: x \neq y \land W(x, y) \right) \rightarrow$
    $$(\exists w \in S: M(x, w)$$