One-pot dialkylation of cycloalkanones and their ring-closing metathesis to make bridged bicyclic compounds
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2,6-Disubstituted cyclohexanones 3-6 and 2,5-disubstitued cyclopentanones 7-9 were prepared via a one-pot procedure involving sequential deprotonation, alkylation, deprotonation, alkylation and hydrolysis of the imines 1 and 2. The stereochemistry of the major diastereomer from each dialkylation reaction was determined from sodium borohydride reduction of the ketone. The dialkylated cyclohexanones and cyclopentanones products 3-8 were also subjected to ring-closing metathesis (RCM) under infinite dilution conditions and several of these substrates were found to undergo successful RCM.

![Chemical structure diagram]