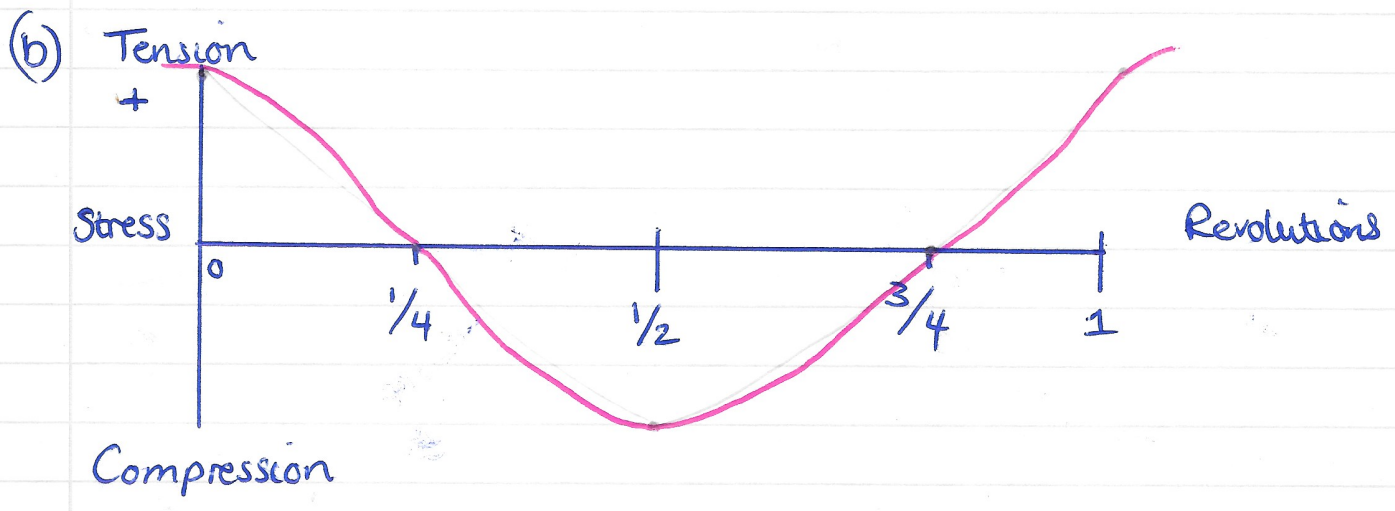


Question 4

- (a) Wohler machines are typically used to carry out fatigue tests. Specimens are tested under conditions of rotating - bending and with a zero mean stress. This puts the top surface into tension and the bottom surface into compression. Commonly fatigue failure occurs due to cyclic stressing taking place. Crack is initiated from points of high stress concentration and propagates under cycling loading, until critical size causing fast fracture.



The loading would look similar to the graph above where even every half a revolution the specimen revolves, the loading stress is changing from tension to compression.