9 A crane lifts a car vertically. The car is inside a crate which is raised by the crane by means of a strong cable. The cable can withstand a maximum tension of 9500 N without breaking. The crate has a mass of 55 kg and the car has a mass of 830 kg.

(a) Find the maximum acceleration with which the crate and car can be raised. [2]

(b) Show on a clearly labelled diagram the forces acting on the **crate** while it is in motion. [1]

(c) Determine the magnitude of the reaction force between the crate and the car when they are ascending with maximum acceleration. [3]