1. Flat solar collectors are often tilted up towards the sun in order to intercept a greater amount of direct solar radiation. The tilt angle from the horizontal also affects the rate of heat loss from the collector. Consider a 2 *m* high and 3 *m* wide solar collector that is tilted at an angle θ from the horizontal. The backside of the collector is heavily insulated. The absorber plate and glass cover, which are spaced 2.5 *cm* from each other, are maintained at 80 deg *C* and 32 deg *C* respectively. Determine the rate of heat loss from the absorber plate by natural convection for θ=0 deg, 20deg and 90deg.

