MATB61 **Quiz 1** **Last name:** _____

First Name: _____

Student's Number:_____

1. [**5 points**] A container manufacturer is considering the purchase of two different types of cardboard-folding machines: model A and model B. Model A can fold 30 boxes per minute and requires 1 attendant, whereas model B can fold 50 boxes per minute and requires 2 attendants. Suppose the manufacturer must fold at least 320 boxes per minute and can not afford more than 12 employees for the folding operation. If a model A machine costs $15,000 and a model B machine costs $25,000, how many machines of each type should be bought to minimize the cost? Formulate the LP model. Please **do not attempt to solve the problem.**

2. [**5 points**] Write the following LP problem in standard form.

$$\text{Minimize } z = 4x_1 - 3x_2 - 4x_3 - 12$$
$$\text{Subject to } x_1 + x_2 \leq 4$$
$$x_1 + 2x_2 + 3x_3 \geq 4$$
$$5 \geq x_1 \geq -1,\ x_3 \leq 0.$$