Problem A factory manager wishes to order two types of machines. Model X costs $6,000 each and model Y costs $8,000 each. The budget available for buying new machines is $48,000 and the space in the workshop can accommodate at most 7 new machines. Suppose the manager buys $x$ model X machines and $y$ model Y machines.

1. Write down all the restrictions on $x$ and $y$. (Reminder: The manager cannot buy $\pi$ model X machines.)

2. Find graphically all the possible pairs of values of $x$ and $y$. 