CH 6.5: 6, 8, 12, 14

6) How many ways are there to select five unordered elements from a set with three elements when repetition is allowed?
5 + 2 bars = 7
5 elements
C(7, 5) = 7!/5!2! = **21**

8) How many different ways are there to choose a dozen donuts from the 21 varieties at a donut shop
C(21 + 12 -1, 12) = C(32, 12) = **225,792,840**

12) How many different combinations of pennies, nickels, dimes, quarters, and half dollars can a piggy bank contain if it has 20 coins in it?
C(5+20-1, 20) = C(24,20) = C(24, 4) = **10,626**

14) How many solutions are there to the equation $x1 + x2 + x3 + x4 = 17$, where $x1$, $x2$, $x3$, and $x4$ are nonnegative integers?
C(4 + 17 -1, 17) = C(20, 17) = C(20,3) = **1,140**