

5.2: 10, 12

Prove these using strong induction.

You *must* clearly state the base case, clearly state the inductive hypothesis, and clearly state where in the inductive step you are making use of the inductive hypothesis.

6.1: 10, 16, 28, 44

6.3: 26 (a,b,c), 32 (d)

Please do not simplify your answers. You may give your answers in terms of $P(n, r)$, $C(n, r)$, factorial, exponentiation, and/or other basic mathematical operations.

Give a brief justification for each of your answers. There is no credit for answers with no explanation.