2.5 page 113-114 Review #1-3 Exercise #1,2,6,7,8

2.5 Review - see Back of Book

exercises

#1. see Back of Book

#2 postage of 24¢ or more using 5¢ & 7¢ stamps

Basis $n = 24, 25, 26, 27, 28$ — 5 values $\Rightarrow$ 7 5¢ stamp

$24 = 2\cdot5 + 2\cdot7$ $25 = 5\cdot5$ $26 = 5+3\cdot7$ $27 = 4\cdot5+7$ $28 = 4\cdot7$

Inductive step : Assume true for postage i, $24 \le i < n$
• Must show postage of n-cents possible
• But $(n-5)$ cents possible by inductive steps, plus 5¢ stamp

#6 For inductive steps, we must $k = n/2 \ge 3$
Since this inequality fails for $n = 4, 5$, the Basis steps
are $n = 3, 4, 5$
* This is in the Back of the Book

#7. we must have $k = n/2 \ge 4$, fails for $4, 5, 6, 7$
the Basis is $n = 4, 5, 6$ and 7

#8 $C_1 = C_2 = 0$ $C_n = C_{\lfloor n/3 \rfloor} + n$ for $n > 2$
prove statement for $n \ge 2$,
BASIS step $2 \le k < n$ or $2 \le n/3 < n$
$n=2$, $n=3 \{2 \le 3/3\}$, $n=4$, $n=5$, $n=6 \{2 \le 6/3 < 6\}\checkmark$

BASIS step : $n = 2, 3, 4, 5$