

Assignment for Tuesday, 3/20, & Thursday, 3/22.

① Exercises from the book:

Section 7.2 \rightarrow 3, 4d, e, 7, 10, 11a, 13, 14, 16, 17, 20.

Section 7.3 \rightarrow 3, 4, 5, 8a, 10.

Section 7.4 \rightarrow 1, 4, 5, 10, 11.

② Supplementary Exercises:

②5 If $n-1$ and $n+1$ are twin primes with $n > 4$, then show that $\phi(n) \leq \frac{n}{3}$.

②6 [Compare to #17b in Section 7.2]

For a fixed positive integer k , if $\phi(n) = k$ has a unique solution, say $n = n_0$, then show that $36 \mid n_0$.

②7 Observe that: $1+2 = \frac{3 \cdot 2}{2}$; $1+3 = \frac{4 \cdot 2}{2}$;

$1+2+3+4 = \frac{5 \cdot 4}{2}$; $1+5 = \frac{6 \cdot 2}{2}$;

$1+2+3+4+5+6 = \frac{7 \cdot 6}{2}$; $1+3+5+7 = \frac{8 \cdot 4}{2}$.

Guess a theorem, state it precisely, and prove it.