List of examinable proofs

The following is a list of the theorems from the lecture notes which you may be asked to prove on the exam. Approximately 60 percent of the marks on the exam will be for proofs of theorems on this list.

Note that the proofs of many theorems build upon one another. Whenever this is the case, I indicate whether auxiliary results need to be proven or just quoted in order to get full points.

Theorem 3.5 (may quote FTA).
Theorem 3.8.
Theorem 4.1 (may quote Theorem 3.8).
Corollary 5.5 (may quote Theorem 5.3).
Theorem 6.1 (only lower bound for $\pi(x)$ is examinable).
Theorem 7.2 and Corollary 7.3.
Prop. 7.8.
Theorem 7.11 (odd primes only).
Suppl. Week 45 : Theorem 1.7 and Theorem 1.10.
Prop. 8.1.
Prop. 9.2 (must prove Prop. 9.1 if used).
Theorem 10.2 (if you follow the proof in the lecture notes, you may quote Lemma 15.3. If you follow the proof on the handout, you may quote Minkowski's Theorem).
Theorem 11.7 (may quote Prop. 12.2 and Theorem 12.4).
Theorem 12.4.
Corollary 12.6 (may quote Theorem 12.4).
Theorem 15.2 (may quote Prop. 14.1 and Lemmas 14.2, 14.3, 15.1).
Prop. 17.2 (must prove Lemma 17.3 if used).
Theorem 17.6 ($h = 2$ only).
Suppl. Week 48 : Theorem 1.3.
Theorem 21.3 (you can be asked to prove the finiteness of one of $W(3.2)$, $W(3,3)$ and $W(4,2)$. If you're asked about $W(4,2)$, then you are allowed to assume the finiteness of $W(3,l)$ for all l).
Szemerédi Regularity Lemma (the proof of the whole RL is too long, but you could be asked to prove one or two of the lemmas along the way, or to complete the proof of the theorem assuming some of these lemmas. In any case, you should know the entire proof.)
Roth's theorem (you may quote the Triangle Counting Lemma).