

## 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 2.3 (may quote Prop. 2.1 and assume division is of quadratic complexity).

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.

Prop. 8.1.

Prop. 9.2 (must prove Prop. 9.1 if used).

Theorem 9.3 (may quote Prop. 9.1).

Theorem 10.2 (may quote Lemma 15.3).

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, 15.1).

Prop. 17.2 (must prove Lemma 17.3 if used).

Theorem 17.6.

Theorem 18.2 for  $h = 2$  (may quote Theorem 20.2 and Lemma 20.3. Furthermore, you can just use the estimate (21.6) and do not need to go into the technicalities of rigorously justifying it).

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  $l$ ).