**Chapter 4 Homework**

1. Use one or more appropriate convergence tests to show if the series converges absolutely or conditionally or diverges:
2.
3. If a series below converges, find out the limit, i.e. what it converges to:
4.
5. If *r(n) = p(n) / q(n)*, where *p* and *q* are polynomials in *n*, can you find general criteria for the series * p(n)* to converge or diverge?
6. For which values of *p* is convergent?
7. Give an example of series and , each of which converges, but such that diverges. *(Hint: try conditionally convergent series, not absolute convergent ones)*
8. Give an example of a divergent series whose partial sums are bounded.