Chapter 5 Review

Factor by grouping.
1) $8m^3 - 4m^2n^2 - 2mn + n^3$

Factor completely. If the polynomial cannot be factored, write prime.
2) $u^2 - 12u + 27$

Factor completely.
3) $6y^5 - 12y^4 + 9y^2$

Factor by grouping.
4) $12x^2 + 17x + 6$

Factor completely.
5) $24x^2 - 104x - 80$
6) $12y^2 + 54y - 30$

Factor the binomial completely. If it is prime, say so.
7) $81y^4 - 49$

Factor completely.
8) $x^2 - 12xy + 36y^2$

Solve the equation.
9) $x^2 + 8x - 48 = 0$
10) $30x^2 = 21 + 99x$
11) $6r^2 = 3r$
12) $9k^2 - 64 = 0$