Factoring Review/Solving

Factor completely by factoring out a GCF, then factoring the remaining trinomial.

1) $x^3 + x^2 - 6x$

2) $2x^4 - 12x^3 + 18x^2$

3) $10x^4 - 90x^2$

4) $x^3 - 7x^2 + 12x$

Factor each sum of cubes.

5) $27x^3 + 125$

6) $8x^3 + 27$

Factor each difference of cubes.

7) $8x^3 - 1$

8) $27x^3 - 125$

Factor each completely by grouping.

9) $x^3 + 5x^2 - 6x - 30$

10) $7r^3 - 42r^2 - 3r + 18$

11) $5n^3 + 40n^2 - n - 8$

12) $6x^3 - x^2 - 42x + 7$

Factor each quadratic form polynomial completely.

13) $x^4 + 6x^2 - 16$

14) $m^4 - 1$

15) $5a^5 + 55a^3 + 150a$

16) $4x^5 - 16x^3 + 12x$ Hint: Take out a GCF!!

Solve for x. (Hint: Factor first similar to #19 below, then set each factor equal to 0 and solve for x)

17) $x^3 - 2x^2 - 5x + 10 = 0$

18) $x^4 - 7x^2 - 18 = 0$

19) $x(3x - 5)(x - 4) = 0$

20) $9x^4 - 30x^2 + 25 = 0$

21) $8x^4 - 54x^2 + 81 = 0$

22) $x^3 - 2x^2 + x = 0$

This problem is optional. Only the Jedi Knights of factoring should attempt it.

23) $x^9 - 25x^5 + 144x = 0$