Directions: State the GCF, then factor.

1) $5x + 15$

GCF:

2) $5y^4 - 20y^3$

GCF:

3) $16a^2b^2 + 20a^2$

GCF:

4) $x^2 + 3x$

GCF:

5) $a^2b + 2ab$

GCF:

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

GCF:

7) $9x^4 - 15x^3 + 3x^2$

GCF:

8) $2p^3q^2 + p^2q + pq$

GCF:

9) $12m^4n^4 + 3m^3n^2 + 6m^2n^2$

GCF:

Directions: Factor by grouping.

10) $6x^3 - 9x^2 + 4x - 6$

11) $x^3 + x^2 + x + 1$

12) $8x^3 + 2x^2 + 12x + 3$

13) $4x^3 - 6x^2 - 6x + 9$

14) $x^3 + x^2 + 2x - 2$

15) $3a - 6b + 5a^2 - 10ab$

16) $2y^3 + 6y^2 + y + 3$

17) $12x^3 - 16x^2 + 3x - 4$

18) $18c^3 - 21c^2 + 30c - 35$

19) $ax - bx + ay - by$

20) $20g^3 - 4g^2 - 25g + 5$

21) $6y^2 - 3y + 2py - p$

Directions: Choose the best answer.

22) Which of the following is not a factorization of $20x^2$?

    A. $(4x)(5x)$ B. $(-4x)(-5x)$ C. $(x)(20x^2)$ D. $(2)(10x^2)$

23) Which of the following shows the correct factorization?

    A. $7x - 14y = 2(x - 7y)$ B. $4m^2n^3 + 2m^2n^2 + 6m^2n = 2m^2n(2n^2 + n + 3)$

    C. $x^3 + 2x^2 + x + 2 = (x + 2)(x + 1)$ D. $4x^3 - 12x^2 - 6x + 9 = x(2x - 6)(2x + 3)$