MAT 050 Practice Test Chapter 13

All test answers are to be in simplest form. A calculator may be used.
Cell phones, iPads, and other electronic devices with scanning or photo ability may NOT be used.
No notes, no books, no homework may be used while taking this test.

Identify the GCF. Then factor out the GCF from the polynomial.

1) $3x^2 + 6x$ GCF = $3x$
Factored Polynomial = $3x(x+2)$
Foil back to check.

2) $8x^3 + 10x^2 - 2x$ GCF = $2x$
Factored Polynomial = $2x(4x^2+5x-1)$

3) $20y^4 + 8y^3 + 14y^2 + 2y$
GCF = $2y$
Factored Polynomial = $2y(10y^3+4y^2+7y+1)$

4) $6x^2y + 3xy - 6y^2$
GCF = $3y$
Factored Polynomial = $3y(2x^2+x-2y)$

Factor by grouping.

5) $x^3 + 2x^2 + 5x + 10 = (x^2+5)(x+2)$

6) $x^3 + 8x^2 - 6x - 48 = (x+8)(x^2-6)$

7) $ax - bx + ay - by = (x+y)(a-b)$

8) $5x^2(x-5) + 6(x-5) = (5x^2+6)(x-5)$

Factor the polynomial completely.
If the polynomial cannot be factored, write "prime."

9) $x^2 + 11x + 18 = (x+2)(x+9)$

10) $y^2 - 11y + 30 = (y-6)(y-5)$

11) $y^2 - 12y + 144$ prime

12) $21x^4 - 7x^3 = 7x^3(3x-1)$

Factor the polynomial completely.
If the polynomial cannot be factored, write "prime."

13) $x^2 + 30x + 225 = (x+15)^2$

14) $x^2 - 144 = (x-12)(x+12)$

15) $x^3 + 6x^2 - 40x = x(x^2+6x-40)$
$x(x+10)(x-4)$

16) $n^2 + 2n - 63 = (n+9)(n-7)$

17) $z^2 - 2z - 15 = (z-5)(z+3)$

18) $2x^2 - 10x + 12 = 2(x^2-5x+6)$
$2(x-2)(x-3)$

19) $100 - z^2 = (10+z)(10-z)$

20) $12x^3 + 12x^2 - 3x = 3x(4x^2+4x-1)$

21) $49m^2 - 121n^2 = (7m+11n)(7m-11n)$

22) $x^2 + 36$ prime

23) $a^2 - 2ab + b^2 = (a-b)^2$

24) $4y^5 + 16y^4 + 2y^3 + 8y^2$
$2y^2(2y^2+1)(y+4)$