Bingo Questions and Answers

4. $160x^3 - 810x$

$10x(16x^2 - 81)$

$10x(4x - 9)(4x + 9)$

15. $9x^2 - 24x - 9$

$3(3x^2 - 8x - 3)$

$3(3x^2 - 9x + x - 3)$

$3(3x(x-3) + 1(x-3))$

$3(3x+1)(x-3)$

18. $8x^3 - 125$

$(2x-5)(4x^2 + 10x + 25)$

13. $(x-1)^2 - 4$

let $y = x-1$

$y^2 - 4$

$(y-2)(y+2)$

$(x-1-2)(x-1+2)$

$(x-3)(x+1)$

2. $3x^3 - 12x^2 - 36x$

$3x(x^2 - 4x - 12)$

$3x(x-6)(x+2)$

20. $(x+1)^2 - 2(x+1) - 24$

let $y = x+1$

$y^2 - 2y - 24$

$(y-6)(y+4)$

$(x+1-6)(x+1+4)$

$(x-5)(x+5)$

1. $121x^2 - 36$

$(11x-6)(11x+6)$

19. $49x^2 - 64y^2$

$(7x-8y)(7x+8y)$

5. $x^3 + 2x^2 + x$

$x(x^2 + 2x + 1)$

$x(x+1)(x+1)$

$x(x+1)^2$

6. $24x^3 + 8x^2 + 24x + 8$

$8(3x^3 + x^2 + 3x + 1)$

$8(x^2(3x+1) + 1(3x+1))$

$8(x^2+1)(3x+1)$

16. $4x^2 - 29x + 30$ $y = 120/x$

$4x^2 - 24x - 5x + 30$

$4x(x-6) - 5(x-6)$

$(4x-5)(x-6)$

3. $16x^3 + 128$

$16(x^3 + 8)$

$16(x+2)(x^2 - 2x + 4)$

7. $3x^3 + 2x^2 - 3x - 2$

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

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

$(x+1)(x-1)(3x+2)$

21. $x^4 - 3x^2 - 18$

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

8. $-x^3 - 8$

$-(x^3 + 8)$

$-(x+2)(x^2 - 2x + 4)$

on sheet $(-x-2)(x^2 - 2x + 4)$

9. $x^2 + 18x + 81$

$(x+9)(x+9)$

11. $9x^2 + 30x + 25$

$9x^2 + 15x + 15x + 25$

$3x(3x+5) + 5(3x+5)$

$(3x+5)(3x+5)$

10. $1-x^3$

$(1-x)(1+x+x^2)$

12. $6x^2+x-1$

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

$3x(2x+1)-1(2x+1)$

$(3x-1)(2x+1)$

14. $9-4x^2$

$(3-2x)(3+2x)$

22. $2(x^2+1)^2+(x^2+1)-3$

let $y=x^2+1$

$2y^2+y-3$

$2y^2+3y-2y-3$

$y(2y+3)-1(2y+3)$

$(y-1)(2y+3)$

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

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

23. $2x^3-16x^2+32x$

$2x(x^2-8x+16)$

$2x(x-4)(x-4)$

$2x(x-4)^2$

17. $(x+2)^2-(y-3)^2$

let $m=x+2$

$b=y-3$

m^2-b^2

$(m-b)(m+b)$

$(x+2-(y-3))(x+2+y-3)$

$(x+2-y+3)(x+y-1)$

$(x-y+5)(x+y-1)$

24. $18x^3+24x^2+6x$

$6x(3x^2+4x+1)$

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

$6x(3x(x+1)+1(x+1))$

$6x(3x+1)(x+1)$

Name: _____ Date: _____

PC: Factoring Practice Ms. Loughran

Factor each of the following polynomials completely.

1. $121x^2 - 36$
2. $3x^3 - 12x^2 - 36x$
3. $16x^3 + 128$
4. $160x^3 - 810x$
5. $x^3 + 2x^2 + x$
6. $24x^3 + 8x^2 + 24x + 8$
7. $3x^3 + 2x^2 - 3x - 2$
8. $-x^3 - 8$
9. $x^2 + 18x + 81$
10. $1 - x^3$
11. $9x^2 + 30x + 25$
12. $6x^2 + x - 1$
13. $(x-1)^2 - 4$
14. $9 - 4x^2$
15. $9x^2 - 24x - 9$
16. $4x^2 - 29x + 30$
17. $(x+2)^2 - (y-3)^2$
18. $8x^3 - 125$
19. $49x^2 - 64y^2$
20. $(x+1)^2 - 2(x+1) - 24$
21. $x^4 - 3x^2 - 18$
22. $2(x^2+1)^2 + (x^2+1) - 3$
23. $2x^3 - 16x^2 + 32x$
24. $18x^3 + 24x^2 + 6x$