Algebra Worksheet – Section 10.5 Name _____
Factoring Polynomials of the form Block ____

$x^2 + bx + c$

Factor

1. $x^2 + 3x + 2$

2. $x^2 - x - 2$

3. $x^2 + x - 6$

4. $a^2 + a - 12$

5. $a^2 - 2a - 35$

6. $b^2 + 8b + 16$

7. $b^2 + 7b - 8$

8. $y^2 - y - 6$

9. $x^2 - 4x - 45$

10. $y^2 - 8y + 15$

11. $p^2 + 12p + 27$

12. $b^2 + 9b + 20$

13. $b^2 + 3b - 40$

14. $a^2 - 15a + 36$

15. $c^2 + 11c + 18$

16. $x^2 + 21x + 100$

Solve each equation by factoring

17. $x^2 + 5x + 6 = 0$

18. $b^2 - b - 20 = 0$

19. $y^2 - y - 72 = 0$

20. $x^2 - 12x = -11$

Algebra Worksheet – Section 10.5 Name _____
Factoring Polynomials of the form Block ____
$x^2 + bx + c$ with GCFs

Factor Completely

1. $2x^2 + 6x + 4$

2. $4a^2 - 12a + 8$

3. $10a^2 + 10 - 20$

4. $7a^2 - 14a - 21$

5. $3y^2 - 15y + 18$

6. $a^3 - 5a^2 + 4a$

7. $x^4 - 15x^3 + 56x^2$

8. $b^4 - 3b^3 - 10b^2$

9. $2a^3 + 8a^2 - 64a$

10. $3a^3 - 9a^2 - 54a$

11. $9p^2 - 54p + 72$

12. $4y^3 - 4y^2 - 24y$

13. $3x^4 - 21x^3 + 10x^2$

14. $5x^4 - 10x^3 - 75x^2$

Solve each equation by factoring

15. $3x^2 + 15x + 18 = 0$

16. $2x^2 + 16x + 24 = 0$

17. $5x^2 - 35x + 60 = 0$

18. $x^3 + 11x^2 - 12x = 0$

19. $2y^2 + 10y = 28$

20. $6y^2 + 36 = 30y$

Algebra Worksheet – Section 10.5
Factoring Polynomials of the form
$x^2 + bx + c$

Name Key
Block ____

Factor

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

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

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

4. $a^2 + a - 12$
$(a+4)(a-3)$

5. $a^2 - 2a - 35$
$(a-7)(a+5)$

6. $b^2 + 8b + 16$
$(b+4)^2$ or $(b+4)(b+4)$

7. $b^2 + 7b - 8$
$(b+8)(b-1)$

8. $y^2 - y - 6$
$(y-3)(y+2)$

9. $x^2 - 4x - 45$
$(x-9)(x+5)$

10. $y^2 - 8y + 15$
$(y-5)(y-3)$

11. $p^2 + 12p + 27$
$(p+9)(p+3)$

12. $b^2 + 9b + 20$
$(b+5)(b+4)$

13. $b^2 + 3b - 40$
$(b+8)(b-5)$

14. $a^2 - 15a + 36$
$(a-3)(a-12)$

15. $c^2 + 11c + 18$
$(c+9)(c+2)$

16. $x^2 + 21x + 100$
~~(x)~~ prime

Solve each equation by factoring

17. $x^2 + 5x + 6 = 0$
$(-5, -1)$

18. $b^2 - b - 20 = 0$
$(5, -4)$

19. $y^2 - y - 72 = 0$
$(9, -8)$

20. $x^2 - 12x = -11$
$x^2 - 12x + 11 = 0$
$(1, 11)$

Algebra Worksheet – Section 10.5
Factoring Polynomials of the form $x^2 + bx + c$ with GCFs

Name _____
Block ____

Factor Completely

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

2. $4a^2 - 12a + 8$
$4(a-2)(a-1)$

3. $10a^2 + 10 - 20$
$10(a+2)(a-1)$

4. $7a^2 - 14a - 21$
$7(a-3)(a+1)$

5. $3y^2 - 15y + 18$
$3(y-2)(y-3)$

6. $a^3 - 5a^2 + 4a$
$a(a-4)(a-1)$

7. $x^4 - 15x^3 + 56x^2$
$x^2(x-7)(x-8)$

8. $b^4 - 3b^3 - 10b^2$
$b^2(b-5)(b+2)$

9. $2a^3 + 8a^2 - 64a$
$2a(a+8)(a-4)$

10. $3a^3 - 9a^2 - 54a$
$3a(a-6)(a+3)$

11. $9p^2 - 54p + 72$
$9(p-4)(p-2)$

12. $4y^3 - 4y^2 - 24y$
$4y(y-3)(y+2)$

13. $3x^4 - 21x^3 + 10x^2$
$x^2(3x^2 - 21x + 10)$

14. $5x^4 - 10x^3 - 75x^2$
$5x^2(x^2+3)(x-5)$

Solve each equation by factoring

15. $3x^2 + 15x + 18 = 0$
$(-3,-2)$

16. $2x^2 + 16x + 24 = 0$
$(-6,-2)$

17. $5x^2 - 35x + 60 = 0$
$(4,3)$

18. $x^3 + 11x^2 - 12x = 0$
$(0,-12,1)$

19. $2y^2 + 10y = 28$
$(-7,2)$

20. $6y^2 + 36 = 30y$
$(2,3)$