Name:_____ Date:_____

REVIEW DITTO FOR UNIT TEST #7 ON FACTORING

Factor the following using the G.C.F method:

1. $\frac{7}{7} - \frac{35d}{7}$ GCF = 7

$7(1-5d)$

2. $\frac{27a^2bc}{9abc} + \frac{18ab^2c}{9abc}$ GCF = 9abc

$9abc(3a+2b)$

3. $\frac{s^2r}{s^2} + \frac{s^3}{s^2} - \frac{s^4v}{s^2}$ GCF = s^2

$s^2(r+s-s^2v)$

4. $\frac{10r}{10} - \frac{10s}{10}$ GCF = 10

$10(r-s)$

5. $\frac{4x}{x} + \frac{x^2}{x}$ GCF = x

$x(4+x)$

6. $\frac{3x^2}{3} + \frac{6x}{3} + \frac{15}{3}$ GCF = 3

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

7. $\frac{ax}{x} + \frac{3x}{x}$ GCF = x

$x(a+3)$

8. $\frac{xp}{x} + \frac{xq}{x}$ GCF = x

$x(p+q)$

9. $\frac{7y}{7} - \frac{7}{7}$ GCF = 7

$7(y-1)$

10. $\pi r^2 - \pi r$ GCF = πr

$\pi r(r-1)$

Factor using the D.O.T.S Method:

11. $\sqrt{x^2}\sqrt{196}$

$(x+14)(x-14)$

12. $\sqrt{100}\sqrt{d^2}$

$(10-d)(10+d)$

13. $\frac{4x^2}{4}-\frac{64y^6}{4}$

$4(x^2-16y^6)$

$4(x+4y^3)(x-4y^3)$

14. $\frac{25}{144}-16y^4$

$\left(\frac{5}{12}-4y^2\right)\left(\frac{5}{12}+4y^2\right)$

15. Factored, the expression $16x^2 - 25y^2$ is equivalent to

1) $(4x-5y)(4x+5y)$ $(4x+5y)(4x-5y)$

2) $(4x-5y)(4x-5y)$

3) $(8x-5y)(8x+5y)$

4) $(8x-5y)(8x-5y)$

16. If Ann correctly factors an expression that is the difference of two perfect squares, her factors could be

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

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

3) $(x-4)(x-4)$

4) $(2y-5)(y-5)$

Write the product of the following:

BOX method

17. $(y-5)(y+5)$

y^2	$-5y$
$5y$	25

y, -5

y^2-25

18. $(x+4)(x+3)$

$x^2+3x+4x+12$

$x^2+7x+12$

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

x^2+6x+9

20. $(2x-3)(x+1)$

$2x^2+2x-3x-3$

$2x^2-x-3$

Factor the following trinomials.

A M

21. $x^2+8x+15$

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

15

1 15

3 5

22. $x^2+13x+40$

$(x+5)(x+8)$

40

1 40

2 20

4 10

5 8

23. $x^2-10x+24$

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

24

1 24

2 12

3 8

4 6

24. $x^2-15x+36$

$(x-3)(x-12)$

36

1 36

2 18

3 12

4 9

25. $x^2+3x-28$

$(x+7)(x-4)$

28

1 28

2 14

4 7

26. x^2-x-6

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

6

1 6

2 3

27. What are the factors of $x^2-10x-24$?

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

2) $(x-4)(x-6)$

3) $(x-12)(x+2)$

4) $(x+12)(x-2)$

$(x-12)(x+2)$

-24

1 24

2 12

3 8

4 6

28. What are the factors of x^2-5x+6?

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

2) $(x-2)$ and $(x-3)$

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

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

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

6

1 6

2 3

29. What are the factors of the expression $x^2 + x - 20$?

20
1 26
2 10
4 5

1) $(x+5)$ and $(x+4)$

2) $(x+5)$ and $(x-4)$

$(x+5)(x-4)$

3) $(x-5)$ and $(x+4)$

4) $(x-5)$ and $(x-4)$

30. What is a common factor of $x^2 - 9$ and $x^2 - 5x + 6$?

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

1) $x+3$

2) $x-3$

3) $x-2$

4) x^2

$x^2 - 5x + 6$

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

6
1 6
2 3

Factor the following trinomials that have a leading coefficient greater than 1.

31. $2x^2 + 11x + 12$

24
1 24
2 12
3 8
4 6

$2x^2 + 8x \mid 3x + 12$

$\frac{2x(x+4)}{x+4} \mid \frac{3(x+4)}{x+4}$

$(2x+3)(x+4)$

32. $2x^2 - x - 3$

6
1 6
2 3

$2x^2 - 2x \mid 3x - 3$

$\frac{2x(x-1)}{(x-1)} \mid \frac{3(x-1)}{(x-1)}$

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

WHEN FACTORING YOU **ALWAYS** LOOK FOR gcf first

33. $2x^2 - 72y^2$

$2(x^2 - 36y^2)$

① gcf
② dots

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

34. $2x^2 - 8x - 10$

$2(x^2 - 4x - 5)$

① gcf
② easy

$2(x-5)(x+1)$

35. $6x^2 - 6x^4$

① gcf
② dots

$6x^2(1-x^2)$

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

36. $x - 25x^3$

① gcf
② dots

$x(1-25x^2)$

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

37. $5x^2 + 15x + 10$

① gcf
② easy tri

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

$5(x+1)(x+2)$

38. $ax^2 - 18ax + 77a$

77
1 77
11 7

$a(x^2-18x+77)$

$a(x-11)(x-7)$

① gcf
② easy tri

39. Factored completely, the expression $2y^2 + 12y - 54$ is equivalent to

1) $2(y+9)(y-3)$
2) $2(y-3)(y-9)$
3) $(y+6)(2y-9)$
4) $(2y+6)(y-9)$

$2(y^2+6y-27)$

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

27
1 27
3 9

40. Factored completely, the expression $2x^2 + 10x - 12$ is equivalent to

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

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

$2(x+6)(x-1)$

1 6
2 3

41. Which expression represents $\frac{36x^2}{4} - \frac{100y^6}{4}$ factored completely?

1) $2(9x+25y^3)(9x-25y^3)$
2) $4(3x+5y^3)(3x-5y^3)$
3) $(6x+10y^3)(6x-10y^3)$
4) $(18x+50y^3)(18x-50y^3)$

$4(9x^2-25y^6)$

$4(3x+5y^3)(3x-5y^3)$

42. Written in simplest factored form, the binomial $2x^2 - 50$ can be expressed as

1) $2(x-5)(x-5)$
2) $2(x-5)(x+5)$
3) $(x-5)(x+5)$
4) $2x(x-50)$

$2x^2-50$

$2(x^2-25)$

$2(x+5)(x-5)$