Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 13A.1 – Factoring by Reverse FOIL

#1-20, Factor by Reverse FOIL. If a polynomial is not factorable, write "prime." (Hint: there is only one problem that is prime)

Reverse FOIL
1. Force FIRST
2. Force SIGNS
3. Force LAST
4. Check OI

Reverse FOIL works on trinomials only.

1. $x^2 + 4x - 5$ (F, OI, L)
   $= (x+5)(x-1)$
2. $r^2 + 6r + 8$ (F, OI, L)
   $= (r+4)(r+2)$
3. $z^2 - 23z - 24$ (F, OI, L)
   $= (z-24)(z+1)$
4. $m^2 - 4m - 12$ (F, OI, L)
   $= (m-6)(m+2)$
5. $k^2 - 5k + 4$ (F, OI, L)
   $= (k-4)(k-1)$
6. $q^2 - q - 12$ (F, OI, L)
   $= (q-4)(q+3)$
7. $g^2 - 12g + 35$ (F, OI, L)
   $= (g-7)(g-5)$
8. $x^2 + 4x - 8$ (F, OI, L)
   prime
9. $r^2 - 4rs - 21s^2$ (F, OI, L)
   $= (r-7s)(r+3s)$
10. $12 + 7d + d^2 = d^2 + 7d + 12$ (F, OI, L)
    Always write in standard form.
    $= (d+4)(d+3)$
11. $a^2 - 6ab - 27b^2$ (F, OI, L)
    $= (a-9b)(a+3b)$
12. $x^2 - xy - 2y^2$ (F, OI, L)
    $= (x-2y)(x+y)$
13. $m^2 - 14mn + 13n^2$ (F, OI, L)
    $= (m-13n)(m-n)$
14. $8n^2 + 19np + 6p^2$ (F, OI, L)
    $= (8n+3p)(n+2p)$
15. $x^2 - 8xy - 20y^2$ (F, OI, L)
    $= (x-10y)(x+2y)$
16. $a^2 - 9ab - 52b^2$ (F, OI, L)
    $= (a-13b)(a+4b)$
17. $y^4 + 23y^2 - 50$ (F, OI, L)
    $= (y^2+25)(y^2-2)$
18. $p^2 + 25pq - 350q^2$ (F, OI, L)
    $= (p+35q)(p-10q)$
19. $w^8 - 2w^4 - 3$ (F, OI, L)
    $= (w^4-3)(w^4+1)$
20. $16d^2 - 289d + 18$ (F, OI, L)
    $= (16d-1)(d-18)$