

Name _____

Date _____

Factoring Review – Make sure everything is factored COMPLETELY!

1. Always look for a GCF first!
2. If there is a GCF, factor it out and then use your chart to determine if you can factor what's left inside the parenthesis any further
3. If there is no GCF, use your chart and the type of polynomial to determine how to factor (see below)

Factoring Trinomials

- Use box method (or shortcut if there's no leading coefficient)
- Watch your signs!

Factoring Binomials

- Look to see if it's a difference of squares, if it's not and there's no GCF, then it cannot be factored further

Factoring with 4 Terms

- If there's no GCF of all 4 terms, use grouping – group terms in pairs and find the GCF of each pair. Your GCF's are one factor and the remaining factors, which should be the same, are the second factor

*Show all necessary work on another piece of paper and staple to the back.

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|-----|--|---|-----|------------------------|--|
| 1. | $5x + 30$ | $\underline{5(x+6)}$ | 2. | $16x + 4y$ | $\underline{4(4x+y)}$ |
| | $x^2 - 9x + 20$ | $\underline{(x-5)(x-4)}$ | 4. | $x^3y + x^2$ | $\underline{x^2(xy+1)}$ |
| 5. | $3x^2 - 18x + 15$
$3(x^2 - 6x + 5)$ | $\underline{3(x-1)(x-5)}$ | 6. | $2x^2 - 8$ | $\underline{2(x^2-4) = 2(x+2)(x-2)}$ |
| 7. | $10x^2 - 90$ | $\underline{10(x^2-9) = 10(x+3)(x-3)}$ | 8. | $x^2 + 12x + 32$ | $\underline{(x+8)(x+4)}$ |
| 9. | $4x^2 + 7x + 3$ | $\underline{(4x+3)(x+1)}$ | 10. | $2x^2 - x - 21$ | $\underline{(2x-7)(x+3)}$ |
| 11. | $25x^3 - 15x^2$ | $\underline{5x^2(5x-3)}$ | 12. | $2x^2 - 4x - 16$ | $\underline{2(x+2)(x-4)}$ |
| 13. | $2my - 7x - 7m + 2xy$ | $\underline{m(2y-7) + x(2y-7)}$
$\underline{(2my-7m) + 2xy-7x}$
$\underline{(m+x)(2y-7)}$ | 14. | $15x^2y^2 + 25xy - 5x$ | $\underline{5x(3xy^2 + 5y - 1)}$ |
| 15. | $6x^3 + 14x^2 + 4x$ | $\underline{2x(3x^2 + 7x + 2)}$
$\underline{2x(2x+1)(x+2)}$ | 16. | $5x^3 - 20x$ | $\underline{5x(x^2-4) = 5x(x+2)(x-2)}$ |
| | $x^2 + 5x + 7x + 35$
$x^2 + 7x + 5x + 35$ | $\underline{x(x+7) + 5(x+7)}$
$\underline{(x+5)(x+7)}$ | 18. | $12x^3 + 4x^2$ | $\underline{4x^2(3x+1)}$ |
| 19. | $3x^2 - 3$ | $\underline{3(x^2-1) = 3(x+1)(x-1)}$ | 20. | $2x^2 + 9x + 4$ | $\underline{(2x+1)(x+4)}$ |