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| **STEPS FOR FACTORING (no matter what kind of polynomial it is.)** |
| **Step 1:** | Factor out the GCF, if there is one. |
| **Step 2:** | Count the number of terms. |
| **Step 3:** | **A)** 2 terms* Is it a ***difference of squares***? $A^{2}-B^{2}=\left(A+B\right)\left(A-B\right)$
* Is it a ***difference of two cubes***? $A^{3}-B^{3}=\left(A-B\right)\left(A^{2}+AB+B^{2}\right)$
* Is it a ***sum of two cubes***? $A^{3}+B^{3}=\left(A+B\right)\left(A^{2}-AB+B^{2}\right)$
* Is it a ***sum of squares***? $A^{2}+ B^{2}=Prime!$

**B)** 3 terms* Is the coefficient of the $x^{2}$ term 1?
* Use the “Box”.

$$x^{2}+bx+c=\left(x+m\right)\left(x+n\right) $$$$where m∙n=c, m+n=b$$* Is the coefficient of the $x^{2}$ term different than a 1?
* Then use factoring by grouping.
* OR Use the “Box”.

**C)** 4 terms* Use factoring by grouping. (Remember: sometimes we need to rearrange our terms into different pairs.)
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| **Step 4:** | CHECK YOUR WORK! |

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