

Factoring by Grouping

May 31

Factoring by grouping is used when there are 4 terms.

- pair up terms that have a common factor
- factor out common factors so that binomials are the same
- combine together using $ac + bc = (a + b)c$

$$\begin{array}{l} \textcircled{1} \quad (5mx - 20m) + (8x - 32) \\ \quad \quad \quad \begin{array}{c} a \quad c \quad + \quad b \quad c \\ 5m(x-4) + 8(x-4) \\ \hline (5m+8)(x-4) \end{array} \end{array}$$
$$\begin{array}{l} \textcircled{2} \quad (9y^3 + 27y^2) + (-4y - 12) \\ \quad \quad \quad \begin{array}{c} 9y^2(y+3) - 4(y+3) \\ \hline (9y^2 - 4)(y+3) \\ (3y+2)(3y-2)(y+3) \end{array} \end{array}$$