



1. Factor  $x^2 - 4x - 21$
2. Factor  $12x^2y^5 - 30x^5y^3 + 42xy^2z$
3. Factor  $36x^4 - 49$
4. Factor  $5n^2 + 6n - 8$
5. Simplify  $(3x - 2)(5x - 2)$

Factor  $x^2 - 4x - 21$ 

$$\begin{array}{l} \underline{3} \quad \underline{-7} = \ominus 21 \\ \underline{3} \quad \underline{-7} = \ominus 4 \end{array} = (x+3)(x-7)$$

↑ Diff  
↓ Big  $\ominus$

$$\begin{array}{l} 1 \quad x \quad -21 \\ 3 \quad x \quad -7 \end{array}$$

2. Factor  $12x^2y^5 - 30x^5y^3 + 42xy^2z$

$$= 6xy^2(2xy^3 - 5x^4y + 7z)$$

3. Factor  $36x^4 - 49$

$$(6x^2)^2 - (7)^2$$

$$= (6x^2 + 7)(6x^2 - 7)$$

4. Factor  $5n^2 + 6n - 8$

$-4 \times 10 = -40$  (Diff)  
 $-4 + 10 = +6$  (Big +)

Clinger

$(\frac{5n-4}{5})(\frac{5n+10}{5})$

$(n-\frac{4}{5})(n+2)$

$= (5n-4)(n+2)$

$-1 \times 40$   
 $-2 \times 20$   
 $-4 \times 10$

5. Simplify  $(\underline{3x} - 2)(5x - \underline{2})$

$$15x^2 - 6x - 10x + 4$$

$$= 15x^2 - 16x + 4$$

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