

$$1y^2 - 3y - 40$$

- 1 · 40
- 2 · 20
- 4 · 10
- 5 · 8

$$(y + 5)(y - 8)$$

$$y^2 - 5y - 36$$

$$(y - 9)(y + 4)$$

$$x^6 - x^3 - 6$$

$\swarrow$  1.6  
 $\swarrow$  2.3

$$(x^3 + 2)(x^3 - 3)$$

$0 + I = x^3$

$$x^4 - 4x^2 - 5$$

$$(x^2 + 1)(x^2 - 5)$$

$$3x^2 + 3x - 18$$

Factor

$$3(x^2 + x - 6)$$

① look for GCF

$$3(x+3)(x-2)$$

12

∧

3 · 4

∧

2 · 2

$$4y^3 + 12y^2 - 72y$$

$$4(y)$$

$$4(y(y^2 + 3y - 18))$$

$$4y(y+6)(y-3)$$

Factor

$$3x^4 + 54x^3 + 135x^2$$

$$3x^2(x^2 + 18x + 45)$$

$$3x^2(x+15)(x+3)$$

finish 10.4 days

Factor

$$1.3 \quad 3x^2 + 8x + 5 \quad 1.5$$

$$(1x \quad 5)(3x \quad 1)$$

$$(1x + 1)(3x + 5)$$

$$~~(3x \quad 1)(1x \quad 5)~~$$

$$\begin{array}{r} 1x \\ 15x \\ \hline \end{array}$$

$$\begin{array}{r} 5x \\ 3x \end{array}$$

~~1.8~~  
~~2.4~~  $8y^2 + 10y + 3$  <sup>-1.3</sup>

$3y$

$8y$

$1y$

$24y$

$+6y$

$+4y$ 


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$$\left( \begin{array}{l} 1y \\ 1y \end{array} \right) \left( \begin{array}{l} 1 \\ 3 \end{array} \right) \left( \begin{array}{l} 8y \\ 8y \end{array} \right) \left( \begin{array}{l} 3 \\ 1 \end{array} \right)$$

$$\left( 2y + 1 \right) \left( 4y + 3 \right)$$

$$3y^2 + 22y - 16$$

1.3  
1.6  
2.3

1.6  
2.8  
4.4

Factor

$$(3y - 2)(y + 8)$$

$$\begin{array}{r} 24y \\ -2y \\ \hline \end{array}$$

$$6y^2 - 23y + 15$$

1.6  
2.3

1.5  
3.5

$$(y - 3)(6y - 5)$$

$$\begin{array}{r} -5y \\ -18y \\ \hline \end{array}$$

# Factor

- ① look for a GCF
- ② Count the # of terms
  - 2-terms
  - 3-terms ← trial & error  
factor by grouping
  - 4-terms ← factor by grouping (pairs)



Factor by grouping

$$8x^2 - 18x + 9$$

end  
10.4

$$72 \begin{cases} 1 \cdot 72 \\ 2 \cdot 36 \\ 3 \cdot 24 \\ 4 \cdot 18 \\ 6 \cdot 12 \end{cases}$$

$$8x^2 - 12x - 6x + 9$$

$$4x(2x-3) - 3(2x-3)$$

$$(2x-3)(4x-3)$$

$$3y^2 + 22y - 16$$

$$\textcircled{1} 3 \cdot 16 = 48$$

$$\textcircled{2} 48 \leftarrow \begin{matrix} 1 \cdot 48 \\ 2 \cdot 24 \end{matrix}$$

$$3y^2 + 24y - 2y - 16$$

$$3y(y+8) - 2(y+8)$$

$$(y+8)(3y-2)$$