

Factoring Friday 1

April 6, 2018 8:38 AM

Factoring Friday

Completely factor:

1. $x^2 + 8x + 12 \xrightarrow{\begin{matrix} 12 \\ 1 \cdot 12 \\ 2 \cdot 6 \\ 3 \cdot 4 \end{matrix}} (x+2)(x+6)$

2. $x^2 + 4$ **NOT factorable**

3. $x^2 - xy - 6y^2 \xrightarrow{\begin{matrix} -6 \\ -1 \cdot 6 \\ 2 \cdot 3 \end{matrix}} x^2 - x - 6 \xrightarrow{\text{put in 2nd variable}} (x-3)(x+2) \rightarrow (x-3y)(x+2y)$
double pattern

4. $2x^2 + 11x + 14 \rightarrow (x+2)(2x+7)$

5. $3(x+1)^2 + 9(x+1) + 6 \rightarrow 3a^2 + 9a + 6 \rightarrow 3(a^2 + 3a + 2) \rightarrow 3(a+2)(a+1) \rightarrow 3(x+3)(x+2)$
replace with a single variable

6. $10x^2 - 19x + 6 \rightarrow (5x-2)(2x-3)$

7. $(x-9)^2 - 25(2x+1)^2 \rightarrow a^2 - 25b^2 \rightarrow (a-5b)(a+5b)$
replace with a variable
 $(x-9-5(2x+1))(x-9+5(2x+1))$
 $(x-9-10x-5)(x-9+10x+5)$
 $(-9x-14)(11x-4)$

8. $x^2 - 3x - 18 \xrightarrow{\begin{matrix} -18 \\ 1 \cdot 18 \\ 2 \cdot 9 \\ 3 \cdot 6 \end{matrix}} (x-6)(x+3)$

9. $9x^2 - 15y^2 \rightarrow 3(3x^2 - 5y^2)$

10. $x^4 - 16x^2 + 64 \xrightarrow{\begin{matrix} 64 \\ 1 \cdot 64 \\ 2 \cdot 32 \\ 4 \cdot 16 \\ 8 \cdot 8 \end{matrix}} (x^2-8)(x^2-8)$
 or $(x^2-8)^2$

$\frac{28}{1 \cdot 28}$
 $\frac{28}{2 \cdot 14}$
 $\frac{28}{4 \cdot 7}$

$2x^2$	$+4x$
$+7x$	14

$\frac{60}{1 \cdot 60}$
 $\frac{60}{2 \cdot 30}$
 $\frac{60}{3 \cdot 20}$
 $\frac{60}{4 \cdot 15}$
 $\frac{60}{5 \cdot 12}$
 $\frac{60}{6 \cdot 10}$

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

C
D
P
E
F
U