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1)  $5b^2 + 2b - 7$   
 $x^2 + 2x - 35$   
 $(x+7)(x-5)$   
 $(5x+7)(x-1)$   
 ~~$\begin{matrix} -35 \\ 7 \times -5 \\ 2 \end{matrix}$~~

2)  $3v^2 - 17v + 10$   
 $x^2 - 17x + 30$   
 $(x-2)(x-15)$   
 $(3x-2)(x-5)$   
 ~~$\begin{matrix} 30 \\ -2 \times -15 \\ -17 \end{matrix}$~~

3)  $2m^2 + 7m - 15$   
 $x^2 + 7x - 30$   
 $(x+10)(x-3)$   
 $(x+5)(2x-3)$   
 ~~$\begin{matrix} -30 \\ 10 \times -3 \\ 7 \end{matrix}$~~

4)  $2x^2 - 7x - 15$   
 $x^2 - 7x - 30$   
 $(x-10)(x+3)$   
 $(x-5)(2x+3)$   
 ~~$\begin{matrix} -30 \\ -10 \times 3 \\ -7 \end{matrix}$~~

5)  $3a^2 + 16a + 5$   
 $x^2 + 16x + 15$   
 $(x+15)(x+1)$   
 $(x+5)(3x+1)$   
 ~~$\begin{matrix} 15 \\ 15 \times 1 \\ 16 \end{matrix}$~~

6)  $3x^2 - 19x + 20$   
 $(x-15)(x-4)$   
 $(x-5)(3x-4)$   
 ~~$\begin{matrix} 60 \\ -15 \times -4 \\ -19 \end{matrix}$~~

7)  $3b^2 + 10b + 8$   
 $x^2 + 10x + 24$   
 $(x+6)(x+4)$   
 $(x+2)(3x+4)$   
 ~~$\begin{matrix} 24 \\ 6 \times 4 \\ 10 \end{matrix}$~~

8)  $3m^2 - 2m - 1$   
 $(x-3)(x+1)$   
 $(x-1)(3x+1)$   
 ~~$\begin{matrix} -3 \\ -3 \times 1 \\ -2 \end{matrix}$~~

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9)  $2n^2 + 5n - 25$

$x^2 + 5x - 50$

$(x + \frac{10}{2})(x - \frac{5}{2})$

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

~~$\frac{-50}{5} \times -5$~~

10)  $5n^2 + 4n - 12$

$x^2 + 4x - 60$

$(x + \frac{10}{5})(x - \frac{6}{5})$

$(x + 2)(5x - 6)$

~~$\frac{-60}{4} \times -6$~~

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11)  $24v^2 + 20v - 24$

$4(6x^2 + 5x - 6)$

$4(x^2 + 5x - 36)$

$4(x + \frac{9}{6})(x - \frac{4}{6})$

$4(x + \frac{3}{2})(x - \frac{2}{3}) \rightarrow 4(2x + 3)(3x - 2)$

~~$\frac{-36}{5} \times -4$~~

12)  $8v^2 + 14v - 4$

$2(4x^2 + 7x - 2)$

$2(x + \frac{8}{4})(x - \frac{1}{4})$

$2(x + 2)(4x - 1)$

~~$\frac{-8}{7} \times -1$~~

13)  $8x^2 - 24x + 10$

$2(4x^2 - 12x + 5)$

$2(x - \frac{10}{4})(x - \frac{2}{4}) \rightarrow 2(x - \frac{5}{2})(x - \frac{1}{2}) \rightarrow 2(2x - 5)(2x - 1)$

~~$\frac{20}{-12} \times -2$~~

14)  $12r^2 + 10r + 2$

$2(6x^2 + 5x + 1)$

$2(x + \frac{1}{2})(x + \frac{1}{2}) \rightarrow 2(3x + 1)(2x + 1)$

~~$\frac{6}{5} \times 3$~~

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15)  $18n^2 + 33n + 12$   
 $3(6x^2 + 11x + 4)$   
 $3(x^2 + 11x + 24)$   
 $3(x+8)(x+3)$   
 $3(x+\frac{4}{6})(x+\frac{1}{6}) \rightarrow 3(3x+4)(2x+1)$

16)  $8b^2 + 22b + 12$   
 $2(4x^2 + 11x + 6)$   
 $2(x^2 + 11x + 24)$   
 $2(x+8)(x+3)$   
 $2(x+2)(4x+3)$

17)  $12x^2 - 12x - 45$   
 $3(4x^2 - 4x - 15)$   
 $3(x^2 - 4x - 60)$   
 $3(x - \frac{10}{4})(x + \frac{6}{4}) \rightarrow 3(x - \frac{5}{2})(x + \frac{3}{2})$   
 $3(2x - 5)(2x + 3)$

18)  $8x^2 - 42x + 40$   
 $2(4x^2 - 21x + 20)$   
 $2(x^2 - 21x + 80)$   
 $2(x - \frac{16}{4})(x - \frac{5}{4})$   
 $2(x - 4)(4x - 5)$

19)  $12x^2 + 2x - 4$   
 $2(6x^2 + x - 2)$   
 $2(x + \frac{4}{6})(x - \frac{3}{6})$   
 $2(x + \frac{2}{3})(x - \frac{1}{3}) \rightarrow 2(3x + 2)(2x - 1)$

20)  $8v^2 - 16v + 6$   
 $2(4x^2 - 8x + 3)$   
 $2(x^2 - 8x + 12)$   
 $2(x - \frac{6}{4})(x - \frac{2}{4}) \rightarrow 2(x - \frac{3}{2})(x - \frac{1}{2})$   
 $2(2x - 3)(2x - 1)$

