More factoring

Wednesday, October 2, 2019 2:04 PM

$\div \frac{1}{3} = \times \frac{3}{1}$

Factor $x^2 - \frac{17}{3}x - 2$

$\frac{1}{3}(3x^2 - 17x - 6)$ $\quad p = -18$, $s = -17$, $+1 \quad -18$

$\frac{1}{3}(3x^2 - 18x + x - 6)$

$\frac{1}{3}(3x(x-6) + 1(x-6))$

$\frac{1}{3}(x-6)(3x+1)$

$x^2 - 1.5x + 0.5$

$x^2 - \frac{3}{2}x + \frac{1}{2}$

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

$\frac{1}{2}(2x-1)(x-1)$

Try: Factor $\frac{1}{3}x^2 + \frac{7}{6}x + \frac{1}{2}$.

$\frac{1}{6}(2x^2 + 7x + 3)$ $\quad p = 6$, $s = 7 \quad 1, 6$

$\frac{1}{6}(2x+1)(x+3)$

$\frac{1}{3} \div \frac{6}{6} \div \frac{1}{6}$

$\frac{1}{3} \times \frac{6}{1} = \frac{6}{3} = 2$

eg $6(2x+3)^2 + 19(2x+3) - 7$ $\quad n = (2x+3)$

$\rightarrow 6n^2 + 19n - 7$ $\quad p = -42$, $s = 19$

$6n^2 + 21n - 2n - 7 \quad 21 \quad -2$

$S = 19$

$6n^2 + 21n - 2n - 7$ $\quad 21, -2$

$3n(2n+7) - 1(2n+7)$

$(2n+7)(3n-1)$

$(2(2x+3)+7)(3(2x+3)-1)$

$(4x+6+7)(6x+9-1)$

$(4x+13)(6x+8)$

$2(4x+13)(3x+4)$

Try: $10(3x-2)^2 + 21(3x-2) - 10$ $\quad n = 3x-2$

$10n^2 + 21n - 10$ $\quad P = -100$, $S = 21$

$10n^2 + 25n - 4n - 10$ $\quad 25, -4$

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

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

$(2(3x-2)+5)(5(3x-2)-2)$

$(6x-4+5)(15x-10-2)$

$(6x+1)(15x-12)$

$3(6x+1)(5x-4)$

Pg 195-198 # 5, 7, 8, 10, 15-20

(19) $x^2 - 6x + 9 - y^2$

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

$(x-3+y)(x-3-y)$

(20) $3x^2 + nx - 4$

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

$6x - 2x = 4x$

$n = 4$