(ex1) ⇒ $(3x+2)\cdot(x+4)$

$3x\cdot x + 3x\cdot 4 + 2x + 8$

$3x^2 + 12x + 2x + 8$

$3x^2 + 14x + 8$

(ex2) $3x^2 * 5x^4 = 15x^6$

$a^2 * a^3 = a^{2+3} = a^5$

$\frac{a^4}{a^3} = a^{4-3} = a^1 = a$

$(a^2)^3 = a^{2*3} = a^6$

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ex3 $(2x-1)(x+3)$

$2x\cdot x + 2x\cdot 3 - 1\cdot x - 1\cdot 3$

$2x^2 + 6x - 1x - 3$

$= 2x^2 + 5x - 3$

ex (1) * $(x-3)(2x-5)$

$\frac{+}{+} = +$ $\quad \frac{-}{-} = +$ $\quad \frac{-}{+} = -$ $\quad \frac{+}{-} = -$

$+ \times + = +$ $\quad - \times - = +$ $\quad - \times + = -$ $\quad + \times - = -$

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

$2x^2 - 5x - 6x + 15$

$$\boxed{2x^2 - 11x + 15}$$

$3 + 5 = +8$

$-3 - 5 = -8$

$-3 + 5 = +2$

$+3 - 5 = -2$

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ex 5

$\frac{3}{5} \times \frac{2}{7} = \frac{3 \times 2}{5 \times 7} = \frac{6}{35}$

$\frac{3}{5} \times \frac{4}{1} = \frac{3 \times 4}{5 \times 1} = \frac{12}{5}$

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

ex 6

$\frac{3}{5} + \frac{4}{6} = \frac{3\times6 + 4\times5}{5\times6} = \frac{18+20}{30}$

$= \boxed{\frac{38}{30}}$

$\frac{-1}{4} + \frac{2}{3} = \frac{-1\times3 + 2\times4}{4\times3} = \frac{-3+8}{12}$

$= \boxed{\frac{+5}{12}}$

$\frac{4}{1} + \frac{2}{3} = \frac{12+2}{1\times3} = \boxed{\frac{14}{3}}$

ex

$\frac{3}{4} - \frac{2}{7} = \frac{3\times7 - 2\times4}{4\times7} = \frac{21-8}{28}$

$\boxed{\frac{13}{28}}$

ex

$\frac{1}{2} - \frac{5}{6} = \frac{1\times6 - 5\times2}{2\times6} = \frac{6-10}{12}$

$= \boxed{\frac{-4}{12}} = \boxed{\frac{-1}{3}}$

$\frac{-4/4}{12/4} = \boxed{\frac{-1}{3}}$

$(x+y)^2 = (\text{الحد الأول})^2 + (\text{الحد الثاني})^2 + (2)(\text{الحد الأول})(\text{الحد الثاني})$

$(x)^2 + (+y)^2 + (x)(+y)(2)$

$x^2 + y^2 + 2xy$

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

$x^2 + 9 + 6x$

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

$x^2 + 9 - 6x$

$(2x+5)^2 = (2x)^2 + (5)^2 + (2x)(5)(2)$

$(2)^2(x)^2 + 25 + 20x$

$4x^2 + 25 + 20x$

$(3x-4)^2 = (3x)^2 + (-4)^2 + (3x)(-4)(2)$

$9x^2 + 16 + 3x(-8)$

$9x^2 + 16 - 24x$