The method: Adding, subtracting, and multiplying functions

$(f + g)(x) = f(x) + g(x)$, $(f - g)(x) = f(x) - g(x)$, and $(fg)(x) = f(x) \cdot g(x)$. Combine like terms.

$f(x) = -4x + 9, \quad g(x) = x - 8; \quad (fg)(x) = -4x^2 + 41x - 72$

$(fg)(x) = (-4x + 9)(x - 8) = -4x^2 + 41x - 72$

multiply each term of f(x) by each term of g(x)

$f(x) = -3x - 1, \quad g(x) = x - 4; \quad (f + g)(x) = -2x - 5$

$(f + g)(x) = (-3x - 1) + (x - 4) = -2x - 5$ add f(x) and g(x), then combine like terms

$f(x) = 5x + 2, \quad g(x) = -x^2 + 6; \quad (f - g)(x) = x^2 + 5x - 4$

$(f - g)(x) = (5x + 2) - (-x^2 + 6) = x^2 + 5x - 4$

subtract all of g(x): change every sign in it

Problems 1 and 2 worked out · Version 0A

$f(x) = -x - 3, \quad g(x) = -3x^2 + 6x - 2; \quad (f - g)(x) = 3x^2 - 7x - 1$

$(f - g)(x) = (-x - 3) - (-3x^2 + 6x - 2) = 3x^2 - 7x - 1$

subtract all of g(x): change every sign in it

$f(x) = -5x + 3, \quad g(x) = x^2 - 4x - 9; \quad (f - g)(x) = -x^2 - x + 12$

$(f - g)(x) = (-5x + 3) - (x^2 - 4x - 9) = -x^2 - x + 12$

subtract all of g(x): change every sign in it

Adding, subtracting, and multiplying functions · Ve…

1) $3x^2 - 7x - 1$ 2) $-x^2 - x + 12$
3) $20x^2 + 49x + 30$ 4) $-x - 8$ 5) $2x^2 - 2x$
6) $x^2 + 4x$ 7) $3x^2 - 3x$ 8) $8x^3 - 2x^2 - 10x - 3$
9) $-x^2 - 2x + 15$ 10) $-3x^2 - 11x - 8$
11) $-8x - 4$ 12) $x^2 - x - 2$
13) $x^3 - 4x^2 + 13x - 18$
14) $-3x^3 - 13x^2 - 15x - 4$
15) $2x^3 + 7x^2 - 5x - 24$ 16) $5x - 2$
17) $-6x^2 - 16x + 32$ 18) $3x^2 + 10x - 2$
19) $12x^2 - 11x - 56$ 20) $2x$
21) $6x^3 + 4x^2 - 14x + 48$