展開と因数分解 [乗法公式を利用した展開(2)]

＜演習問題＞
次の式を展開せよ。

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

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

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

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

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

(6) $(x-1)^2$

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

(8) $(x+7)(x-7)$

(9) $(x-6)(x+6)$

(10) $(2+x)^2$

(11) $(8+x)^2$

(12) $(x+10)^2$

(13) $(x-12)^2$

(14) $(9-x)^2$

(15) $(6-x)^2$

(16) $(2+x)(2-x)$

(17) $(3+x)(3-x)$

(18) $(2+x)(-x+2)$

＜演習問題＞
次の式を展開せよ。

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

$(x+1)^2 = x^2 + 2 \times 1 \times x + 1^2$
$\qquad = x^2 + 2x + 1$

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

$(x+3)^2 = x^2 + 2 \times 3 \times x + 3^2$
$\qquad = x^2 + 6x + 9$

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

$(x+5)^2 = x^2 + 2 \times 5 \times x + 5^2$
$\qquad = x^2 + 10x + 25$

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

$(x-2)^2 = x^2 - 2 \times 2 \times x + 2^2$
$\qquad = x^2 - 4x + 4$

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

$(x-4)^2 = x^2 - 2 \times 4 \times x + 4^2$
$\qquad = x^2 - 8x + 16$

(6) $(x-1)^2$

$(x-1)^2 = x^2 - 2 \times 1 \times x + 1^2$
$\qquad = x^2 - 2x + 1$

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

$(x+1)(x-1) = x^2 - 1^2$
$\qquad = x^2 - 1$

(8) $(x+7)(x-7)$

$(x+7)(x-7) = x^2 - 7^2$
$\qquad = x^2 - 49$

(9) $(x-6)(x+6)$

$(x-6)(x+6) = x^2 - 6^2$
$\qquad = x^2 - 36$

(10) $(2+x)^2$

$(2+x)^2 = 2^2 + 2 \times 2 \times x + x^2$
$\qquad = x^2 + 4x + 4$

(11) $(8+x)^2$

$(8+x)^2 = 8^2 + 2 \times 8 \times x + x^2$
$\qquad = x^2 + 16x + 64$

(12) $(x+10)^2$

$(x+10)^2 = x^2 + 2 \times 10 \times x + 10^2$
$\qquad = x^2 + 20x + 100$

(13) $(x-12)^2$

$(x-12)^2 = x^2 - 2 \times 12 \times x + 12^2$
$\qquad = x^2 - 24x + 144$

(14) $(9-x)^2$

$(9-x)^2 = 9^2 - 2 \times 9 \times x + x^2$
$\qquad = x^2 - 18x + 81$

(15) $(6-x)^2$

$(6-x)^2 = x^2 - 2 \times 6 \times x + x^2$
$\qquad = x^2 - 12x + 36$

(16) $(2+x)(2-x)$

$(2+x)(2-x) = 2^2 - x^2$
$\qquad = 4 - x^2$

(17) $(3+x)(3-x)$

$(3+x)(3-x) = 3^2 - x^2$
$\qquad = 9 - x^2$

(18) $(2+x)(-x+2)$

$(2+x)(-x+2) = (2+x)(2-x)$
$\qquad = 4 - x^2$