

$$\text{tip: } (ax + b)(a^2x^2 - abx + b^2) \\ = a^3x^3 + b^3$$

$$(1) \ 2(5x - 6)(25x^2 + 30x + 36) \\ = 2(125x^3 - 216) \\ = 250x^3 - 432$$

$$(2) \ -2(3x - 1)(9x^2 + 3x + 1) \\ = -2(27x^3 - 1) \\ = 2 - 54x^3$$

$$(3) \ -(x + 5)(x^2 - 5x + 25) \\ = -(x^3 + 125) \\ = -x^3 - 125$$

$$(4) \ (x + 3)(x^2 - 3x + 9) \\ = x^3 + 27$$

$$(5) \ -3(x - 3)(x^2 + 3x + 9) \\ = -3(x^3 - 27) \\ = 81 - 3x^3$$

$$(6) \ -4(x - 6)(x^2 + 6x + 36) \\ = -4(x^3 - 216) \\ = 864 - 4x^3$$

$$(7) \ -3(3x - 4)(9x^2 + 12x + 16) \\ = -3(27x^3 - 64) \\ = 192 - 81x^3$$

$$(8) \ 4(x - 9)(x^2 + 9x + 81) \\ = 4(x^3 - 729) \\ = 4x^3 - 2916$$

$$(9) \ -4(x + 2)(x^2 - 2x + 4) \\ = -4(x^3 + 8) \\ = -4x^3 - 32$$

$$(10) \ 0(2x + 1)(4x^2 - 2x + 1) \\ = 0(8x^3 + 1) \\ = 0$$

$$(11) \ 4(2x + 5)(4x^2 - 10x + 25) \\ = 4(8x^3 + 125) \\ = 32x^3 + 500$$

$$(12) \ 0(4x + 5)(16x^2 - 20x + 25) \\ = 0(64x^3 + 125) \\ = 0$$

$$(13) \ -4(x - 5)(x^2 + 5x + 25) \\ = -4(x^3 - 125) \\ = 500 - 4x^3$$

$$(14) \ -4(x - 3)(x^2 + 3x + 9) \\ = -4(x^3 - 27) \\ = 108 - 4x^3$$

$$(15) \ -2(2x + 3)(4x^2 - 6x + 9) \\ = -2(8x^3 + 27) \\ = -16x^3 - 54$$

$$(16) \ -5(x + 3)(x^2 - 3x + 9) \\ = -5(x^3 + 27) \\ = -5x^3 - 135$$

$$(17) \ (3x - 7)(9x^2 + 21x + 49) \\ = 27x^3 - 343$$

$$(18) \ 4(4x + 7)(16x^2 - 28x + 49) \\ = 4(64x^3 + 343) \\ = 256x^3 + 1372$$

$$(19) \ 4(4x - 1)(16x^2 + 4x + 1) \\ = 4(64x^3 - 1) \\ = 256x^3 - 4$$

$$(20) \ -3(x - 2)(x^2 + 2x + 4) \\ = -3(x^3 - 8) \\ = 24 - 3x^3$$

$$(21) \ 0(x - 2)(x^2 + 2x + 4) \\ = 0(x^3 - 8) \\ = 0$$

$$(22) \ -5(x - 2)(x^2 + 2x + 4) \\ = -5(x^3 - 8) \\ = 40 - 5x^3$$

$$(23) \ -3(x + 6)(x^2 - 6x + 36) \\ = -3(x^3 + 216) \\ = -3x^3 - 648$$

$$(24) \ -4(4x + 9)(16x^2 - 36x + 81) \\ = -4(64x^3 + 729) \\ = -256x^3 - 2916$$

$$(25) \ 2(x - 2)(x^2 + 2x + 4) \\ = 2(x^3 - 8) \\ = 2x^3 - 16$$

$$(26) \ -5(x - 3)(x^2 + 3x + 9) \\ = -5(x^3 - 27) \\ = 135 - 5x^3$$

$$(27) \ -4(x + 2)(x^2 - 2x + 4) \\ = -4(x^3 + 8) \\ = -4x^3 - 32$$

$$(28) \ 4(x + 7)(x^2 - 7x + 49) \\ = 4(x^3 + 343) \\ = 4x^3 + 1372$$

$$(29) \ -3(4x - 3)(16x^2 + 12x + 9) \\ = -3(64x^3 - 27)$$

$$\begin{aligned}
&= 81 - 192x^3 \\
(30) \quad &-5(5x+2)(25x^2-10x+4) \\
&= -5(125x^3+8) \\
&= -625x^3-40 \\
(31) \quad &-2(x-2)(x^2+2x+4) \\
&= -2(x^3-8) \\
&= 16-2x^3 \\
(32) \quad &0(3x-8)(9x^2+24x+64) \\
&= 0(27x^3-512) \\
&= 0 \\
(33) \quad &-3(2x+3)(4x^2-6x+9) \\
&= -3(8x^3+27) \\
&= -24x^3-81 \\
(34) \quad &4(4x+9)(16x^2-36x+81) \\
&= 4(64x^3+729) \\
&= 256x^3+2916 \\
(35) \quad &-4(x-2)(x^2+2x+4) \\
&= -4(x^3-8) \\
&= 32-4x^3 \\
(36) \quad &-3(2x+1)(4x^2-2x+1) \\
&= -3(8x^3+1) \\
&= -24x^3-3 \\
(37) \quad &-2(4x+1)(16x^2-4x+1) \\
&= -2(64x^3+1) \\
&= -128x^3-2 \\
(38) \quad &-3(x+4)(x^2-4x+16) \\
&= -3(x^3+64) \\
&= -3x^3-192 \\
(39) \quad &-4(4x+3)(16x^2-12x+9) \\
&= -4(64x^3+27) \\
&= -256x^3-108 \\
(40) \quad &-5(3x+10)(9x^2-30x+100) \\
&= -5(27x^3+1000) \\
&= -135x^3-5000 \\
(41) \quad &3(x-3)(x^2+3x+9) \\
&= 3(x^3-27) \\
&= 3x^3-81 \\
(42) \quad &0(2x-3)(4x^2+6x+9) \\
&= 0(8x^3-27) \\
&= 0 \\
(43) \quad &-4(3x+5)(9x^2-15x+25) \\
&= -4(27x^3+125) \\
&= -108x^3-500
\end{aligned}$$

$$\begin{aligned}
(44) \quad &0(5x+1)(25x^2-5x+1) \\
&= 0(125x^3+1) \\
&= 0 \\
(45) \quad &-3(5x-4)(25x^2+20x+16) \\
&= -3(125x^3-64) \\
&= 192-375x^3 \\
(46) \quad &-5(5x-6)(25x^2+30x+36) \\
&= -5(125x^3-216) \\
&= 1080-625x^3 \\
(47) \quad &-4(x-10)(x^2+10x+100) \\
&= -4(x^3-1000) \\
&= 4000-4x^3 \\
(48) \quad &(x-1)(x^2+x+1) \\
&= x^3-1 \\
(49) \quad &0(x-4)(x^2+4x+16) \\
&= 0(x^3-64) \\
&= 0 \\
(50) \quad &-(5x+4)(25x^2-20x+16) \\
&= -(125x^3+64) \\
&= -125x^3-64 \\
(51) \quad &2(x+8)(x^2-8x+64) \\
&= 2(x^3+512) \\
&= 2x^3+1024 \\
(52) \quad &-5(x+2)(x^2-2x+4) \\
&= -5(x^3+8) \\
&= -5x^3-40 \\
(53) \quad &0(x-1)(x^2+x+1) \\
&= 0(x^3-1) \\
&= 0 \\
(54) \quad &-2(x+9)(x^2-9x+81) \\
&= -2(x^3+729) \\
&= -2x^3-1458 \\
(55) \quad &0(4x+7)(16x^2-28x+49) \\
&= 0(64x^3+343) \\
&= 0 \\
(56) \quad &-5(4x+5)(16x^2-20x+25) \\
&= -5(64x^3+125) \\
&= -320x^3-625 \\
(57) \quad &-4(x-4)(x^2+4x+16) \\
&= -4(x^3-64) \\
&= 256-4x^3 \\
(58) \quad &-(3x+5)(9x^2-15x+25) \\
&= -(27x^3+125)
\end{aligned}$$

$$\begin{aligned}
&= -27x^3 - 125 \\
(59) \quad &-5(x+9)(x^2-9x+81) \\
&= -5(x^3+729) \\
&= -5x^3-3645 \\
(60) \quad &0(x+7)(x^2-7x+49) \\
&= 0(x^3+343) \\
&= 0 \\
(61) \quad &-3(x+3)(x^2-3x+9) \\
&= -3(x^3+27) \\
&= -3x^3-81 \\
(62) \quad &(x+6)(x^2-6x+36) \\
&= x^3+216 \\
(63) \quad &4(x+9)(x^2-9x+81) \\
&= 4(x^3+729) \\
&= 4x^3+2916 \\
(64) \quad &-3(x-1)(x^2+x+1) \\
&= -3(x^3-1) \\
&= 3-3x^3 \\
(65) \quad &0(x+8)(x^2-8x+64) \\
&= 0(x^3+512) \\
&= 0 \\
(66) \quad &2(x-4)(x^2+4x+16) \\
&= 2(x^3-64) \\
&= 2x^3-128 \\
(67) \quad &-3(4x+7)(16x^2-28x+49) \\
&= -3(64x^3+343) \\
&= -192x^3-1029 \\
(68) \quad &2(4x-1)(16x^2+4x+1) \\
&= 2(64x^3-1) \\
&= 128x^3-2 \\
(69) \quad &-3(4x+5)(16x^2-20x+25) \\
&= -3(64x^3+125) \\
&= -192x^3-375 \\
(70) \quad &2(x+2)(x^2-2x+4) \\
&= 2(x^3+8) \\
&= 2x^3+16 \\
(71) \quad &-4(2x-7)(4x^2+14x+49) \\
&= -4(8x^3-343) \\
&= 1372-32x^3 \\
(72) \quad &3(2x-1)(4x^2+2x+1) \\
&= 3(8x^3-1) \\
&= 24x^3-3 \\
(73) \quad &3(x-4)(x^2+4x+16)
\end{aligned}$$

$$\begin{aligned}
&= 3(x^3-64) \\
&= 3x^3-192 \\
(74) \quad &4(2x-5)(4x^2+10x+25) \\
&= 4(8x^3-125) \\
&= 32x^3-500 \\
(75) \quad &0(x-9)(x^2+9x+81) \\
&= 0(x^3-729) \\
&= 0 \\
(76) \quad &4(x-6)(x^2+6x+36) \\
&= 4(x^3-216) \\
&= 4x^3-864 \\
(77) \quad &3(x+4)(x^2-4x+16) \\
&= 3(x^3+64) \\
&= 3x^3+192 \\
(78) \quad &-4(x+5)(x^2-5x+25) \\
&= -4(x^3+125) \\
&= -4x^3-500 \\
(79) \quad &4(2x+3)(4x^2-6x+9) \\
&= 4(8x^3+27) \\
&= 32x^3+108 \\
(80) \quad &-4(x-6)(x^2+6x+36) \\
&= -4(x^3-216) \\
&= 864-4x^3 \\
(81) \quad &2(3x+4)(9x^2-12x+16) \\
&= 2(27x^3+64) \\
&= 54x^3+128 \\
(82) \quad &2(x+2)(x^2-2x+4) \\
&= 2(x^3+8) \\
&= 2x^3+16 \\
(83) \quad &(2x+9)(4x^2-18x+81) \\
&= 8x^3+729 \\
(84) \quad &0(x+5)(x^2-5x+25) \\
&= 0(x^3+125) \\
&= 0 \\
(85) \quad &-(x+2)(x^2-2x+4) \\
&= -(x^3+8) \\
&= -x^3-8 \\
(86) \quad &3(4x-9)(16x^2+36x+81) \\
&= 3(64x^3-729) \\
&= 192x^3-2187 \\
(87) \quad &-3(x+2)(x^2-2x+4) \\
&= -3(x^3+8) \\
&= -3x^3-24
\end{aligned}$$

$$\begin{aligned}
(88) \quad & 0(4x-3)(16x^2+12x+9) \\
& = 0(64x^3-27) \\
& = 0 \\
(89) \quad & -2(x-1)(x^2+x+1) \\
& = -2(x^3-1) \\
& = 2-2x^3 \\
(90) \quad & -(x+3)(x^2-3x+9) \\
& = -(x^3+27) \\
& = -x^3-27 \\
(91) \quad & -(x-3)(x^2+3x+9) \\
& = -(x^3-27) \\
& = 27-x^3 \\
(92) \quad & 2(5x+8)(25x^2-40x+64) \\
& = 2(125x^3+512) \\
& = 250x^3+1024 \\
(93) \quad & 3(x+5)(x^2-5x+25) \\
& = 3(x^3+125) \\
& = 3x^3+375 \\
(94) \quad & -(5x-3)(25x^2+15x+9) \\
& = -(125x^3-27) \\
& = 27-125x^3 \\
(95) \quad & -4(x-2)(x^2+2x+4) \\
& = -4(x^3-8) \\
& = 32-4x^3 \\
(96) \quad & -4(4x+5)(16x^2-20x+25) \\
& = -4(64x^3+125) \\
& = -256x^3-500 \\
(97) \quad & 2(3x-2)(9x^2+6x+4) \\
& = 2(27x^3-8) \\
& = 54x^3-16 \\
(98) \quad & -3(2x+3)(4x^2-6x+9) \\
& = -3(8x^3+27) \\
& = -24x^3-81 \\
(99) \quad & -3(x-5)(x^2+5x+25) \\
& = -3(x^3-125) \\
& = 375-3x^3 \\
(100) \quad & -4(x-3)(x^2+3x+9) \\
& = -4(x^3-27) \\
& = 108-4x^3 \\
(101) \quad & -2(5x-3)(25x^2+15x+9) \\
& = -2(125x^3-27) \\
& = 54-250x^3 \\
(102) \quad & (2x-5)(4x^2+10x+25) \\
& = 8x^3-125 \\
(103) \quad & 0(4x-1)(16x^2+4x+1) \\
& = 0(64x^3-1) \\
& = 0 \\
(104) \quad & -(3x-4)(9x^2+12x+16) \\
& = -(27x^3-64) \\
& = 64-27x^3 \\
(105) \quad & 3(x-2)(x^2+2x+4) \\
& = 3(x^3-8) \\
& = 3x^3-24 \\
(106) \quad & -2(x-5)(x^2+5x+25) \\
& = -2(x^3-125) \\
& = 250-2x^3 \\
(107) \quad & -(x+9)(x^2-9x+81) \\
& = -(x^3+729) \\
& = -x^3-729 \\
(108) \quad & (4x+7)(16x^2-28x+49) \\
& = 64x^3+343 \\
(109) \quad & 4(3x+8)(9x^2-24x+64) \\
& = 4(27x^3+512) \\
& = 108x^3+2048 \\
(110) \quad & (2x-7)(4x^2+14x+49) \\
& = 8x^3-343 \\
(111) \quad & (x+7)(x^2-7x+49) \\
& = x^3+343 \\
(112) \quad & 2(4x+5)(16x^2-20x+25) \\
& = 2(64x^3+125) \\
& = 128x^3+250 \\
(113) \quad & -3(3x-7)(9x^2+21x+49) \\
& = -3(27x^3-343) \\
& = 1029-81x^3 \\
(114) \quad & 0(5x-7)(25x^2+35x+49) \\
& = 0(125x^3-343) \\
& = 0 \\
(115) \quad & -4(3x+8)(9x^2-24x+64) \\
& = -4(27x^3+512) \\
& = -108x^3-2048 \\
(116) \quad & 0(5x+1)(25x^2-5x+1) \\
& = 0(125x^3+1) \\
& = 0 \\
(117) \quad & -2(4x-5)(16x^2+20x+25) \\
& = -2(64x^3-125) \\
& = 250-128x^3
\end{aligned}$$

$$\begin{aligned}
(118) \quad & 2(x+1)(x^2-x+1) \\
& = 2(x^3+1) \\
& = 2x^3+2 \\
(119) \quad & 3(3x-8)(9x^2+24x+64) \\
& = 3(27x^3-512) \\
& = 81x^3-1536 \\
(120) \quad & -3(5x+9)(25x^2-45x+81) \\
& = -3(125x^3+729) \\
& = -375x^3-2187 \\
(121) \quad & -3(x-3)(x^2+3x+9) \\
& = -3(x^3-27) \\
& = 81-3x^3 \\
(122) \quad & 3(4x+5)(16x^2-20x+25) \\
& = 3(64x^3+125) \\
& = 192x^3+375 \\
(123) \quad & 2(3x+2)(9x^2-6x+4) \\
& = 2(27x^3+8) \\
& = 54x^3+16 \\
(124) \quad & -5(3x+2)(9x^2-6x+4) \\
& = -5(27x^3+8) \\
& = -135x^3-40 \\
(125) \quad & 0(2x+7)(4x^2-14x+49) \\
& = 0(8x^3+343) \\
& = 0 \\
(126) \quad & 4(2x+1)(4x^2-2x+1) \\
& = 4(8x^3+1) \\
& = 32x^3+4 \\
(127) \quad & 2(3x+7)(9x^2-21x+49) \\
& = 2(27x^3+343) \\
& = 54x^3+686 \\
(128) \quad & -3(x+2)(x^2-2x+4) \\
& = -3(x^3+8) \\
& = -3x^3-24 \\
(129) \quad & -3(5x-6)(25x^2+30x+36) \\
& = -3(125x^3-216) \\
& = 648-375x^3 \\
(130) \quad & 4(x+3)(x^2-3x+9) \\
& = 4(x^3+27) \\
& = 4x^3+108 \\
(131) \quad & -2(5x+1)(25x^2-5x+1) \\
& = -2(125x^3+1) \\
& = -250x^3-2 \\
(132) \quad & -2(x-7)(x^2+7x+49) \\
& = -2(x^3-343) \\
& = 686-2x^3 \\
(133) \quad & -5(2x-3)(4x^2+6x+9) \\
& = -5(8x^3-27) \\
& = 135-40x^3 \\
(134) \quad & (x+8)(x^2-8x+64) \\
& = x^3+512 \\
(135) \quad & 0(4x-3)(16x^2+12x+9) \\
& = 0(64x^3-27) \\
& = 0 \\
(136) \quad & -3(x-3)(x^2+3x+9) \\
& = -3(x^3-27) \\
& = 81-3x^3 \\
(137) \quad & -2(4x-3)(16x^2+12x+9) \\
& = -2(64x^3-27) \\
& = 54-128x^3 \\
(138) \quad & 2(x-6)(x^2+6x+36) \\
& = 2(x^3-216) \\
& = 2x^3-432 \\
(139) \quad & -2(x+1)(x^2-x+1) \\
& = -2(x^3+1) \\
& = -2x^3-2 \\
(140) \quad & -(2x-7)(4x^2+14x+49) \\
& = -(8x^3-343) \\
& = 343-8x^3 \\
(141) \quad & 3(x-1)(x^2+x+1) \\
& = 3(x^3-1) \\
& = 3x^3-3 \\
(142) \quad & -(x+3)(x^2-3x+9) \\
& = -(x^3+27) \\
& = -x^3-27 \\
(143) \quad & 3(x-7)(x^2+7x+49) \\
& = 3(x^3-343) \\
& = 3x^3-1029 \\
(144) \quad & 2(3x+1)(9x^2-3x+1) \\
& = 2(27x^3+1) \\
& = 54x^3+2 \\
(145) \quad & (x+6)(x^2-6x+36) \\
& = x^3+216 \\
(146) \quad & (5x+4)(25x^2-20x+16) \\
& = 125x^3+64 \\
(147) \quad & 0(4x-5)(16x^2+20x+25) \\
& = 0(64x^3-125)
\end{aligned}$$

$$= 0$$

$$(148) \quad 3(2x - 7)(4x^2 + 14x + 49)$$

$$= 3(8x^3 - 343)$$

$$= 24x^3 - 1029$$

$$(149) \quad 3(x + 5)(x^2 - 5x + 25)$$

$$= 3(x^3 + 125)$$

$$= 3x^3 + 375$$

$$(150) \quad (x - 7)(x^2 + 7x + 49)$$

$$= x^3 - 343$$