

Esercizi su: Prodotti notevoli.

1. Esegui le seguenti moltiplicazioni.

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| (a) $(8x + 9)(7x) =$ | $[56x^2 + 63x]$ |
| (b) $(9x + 4)(9x + 7) =$ | $[81x^2 + 99x + 28]$ |
| (c) $(-10x - 3)(x - 3) =$ | $[-10x^2 + 27x + 9]$ |
| (d) $(3x + 1)(-4x - 1) =$ | $[-12x^2 - 7x - 1]$ |
| (e) $(-5x - 7)(6x - 2) =$ | $[-30x^2 - 32x + 14]$ |
| (f) $(-3x + 7)(6x + 6) =$ | $[-18x^2 + 24x + 42]$ |
| (g) $(-3x - 5)(9x + 3) =$ | $[-27x^2 - 54x - 15]$ |
| (h) $(-10x - 10)(7x - 5) =$ | $[-70x^2 - 20x + 50]$ |
| (i) $(-12x + 6)(3x + 10) =$ | $[-36x^2 - 102x + 60]$ |
| (j) $(-7x - 10)(-12x - 9) =$ | $[84x^2 + 183x + 90]$ |
| (k) $(-4x^2 + x)(7x + 7) =$ | $[-28x^3 - 21x^2 + 7x]$ |
| (l) $(-6x)(-11x^2 - 4x + 10) =$ | $[66x^3 + 24x^2 - 60x]$ |
| (m) $(7x - 5)(-6x^2 + 5) =$ | $[-42x^3 + 30x^2 + 35x - 25]$ |
| (n) $(2x + 7)(8x^2 + 8x + 5) =$ | $[16x^3 + 72x^2 + 66x + 35]$ |
| (o) $(8x + 6)(5x^2 - 8x - 9) =$ | $[40x^3 - 34x^2 - 120x - 54]$ |
| (p) $(x + 8)(-2x^2 - 11x + 2) =$ | $[-2x^3 - 27x^2 - 86x + 16]$ |
| (q) $(5x - 12)(4x^2 + 5x - 8) =$ | $[20x^3 - 23x^2 - 100x + 96]$ |
| (r) $(9x^2 - x + 5)(-8x - 10) =$ | $[-72x^3 - 82x^2 - 30x - 50]$ |
| (s) $(-10x + 3)(-2x^2 + 5x - 3) =$ | $[20x^3 - 56x^2 + 45x - 9]$ |
| (t) $(12x - 9)(-8x^2 + 5x - 2) =$ | $[-96x^3 + 132x^2 - 69x + 18]$ |
| (u) $(2x + 10)(-7x^2 + 2x + 11) =$ | $[-14x^3 - 66x^2 + 42x + 110]$ |
| (v) $(-10x - 9)(5x^2 - 5x - 12) =$ | $[-50x^3 + 5x^2 + 165x + 108]$ |
| (w) $(-5x^2 + x - 5)(x^2 + 3) =$ | $[-5x^4 + x^3 - 20x^2 + 3x - 15]$ |
| (x) $(-8x^2 - 5x + 4)(9x^2 + 4x - 1) =$ | $[-72x^4 - 77x^3 + 24x^2 + 21x - 4]$ |
| (y) $(-8x^2 + 3x - 3)(x^2 + 11x - 12) =$ | $[-8x^4 - 85x^3 + 126x^2 - 69x + 36]$ |
| (z) $(-9x^2 + 8x + 10)(-5x^2 - 10x - 10) =$ | $[45x^4 + 50x^3 - 40x^2 - 180x - 100]$ |

2. Esegui le seguenti moltiplicazioni.

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| (a) $(-\frac{3x}{4} - 4)(x + \frac{1}{2}) =$ | $[-\frac{3x^2}{4} - \frac{35x}{8} - 2]$ |
| (b) $(\frac{5x}{2} + 2)(\frac{7x}{5} + 9) =$ | $[\frac{7x^2}{2} + \frac{253x}{10} + 18]$ |
| (c) $(-\frac{x}{11} + 1)(-\frac{10x}{11} + 2) =$ | $[\frac{10x^2}{121} - \frac{12x}{11} + 2]$ |
| (d) $(-\frac{5x}{11} + 1)(5x + \frac{4}{7}) =$ | $[-\frac{25x^2}{11} + \frac{365x}{77} + \frac{4}{7}]$ |
| (e) $(\frac{10x}{11} + 5)(-\frac{6x}{5} + \frac{12}{5}) =$ | $[-\frac{12x^2}{11} - \frac{42x}{11} + 12]$ |
| (f) $(-9x - 3)(\frac{x^2}{2} - 2x + \frac{5}{3}) =$ | $[-\frac{9x^3}{2} + \frac{33x^2}{2} - 9x - 5]$ |
| (g) $(\frac{x}{4} + \frac{7}{11})(-\frac{x}{6} + 1) =$ | $[-\frac{x^2}{24} + \frac{19x}{132} + \frac{7}{11}]$ |
| (h) $(\frac{3x}{11} + \frac{4}{9})(\frac{x}{2} - \frac{1}{2}) =$ | $[\frac{3x^2}{22} + \frac{17x}{198} - \frac{2}{9}]$ |

(i)	$\left(\frac{x}{2} + \frac{12}{5}\right)\left(\frac{9x}{11} + \frac{11}{2}\right) =$	$\left[\frac{9x^2}{22} + \frac{1037x}{220} + \frac{66}{5}\right]$
(j)	$\left(\frac{7x}{5} + \frac{1}{3}\right)\left(-\frac{12x}{5} + \frac{1}{6}\right) =$	$\left[-\frac{84x^2}{25} - \frac{17x}{30} + \frac{1}{18}\right]$
(k)	$\left(4x^2 - \frac{3x}{2} - \frac{1}{2}\right)\left(3x + \frac{9}{5}\right) =$	$\left[12x^3 + \frac{27x^2}{10} - \frac{21x}{5} - \frac{9}{10}\right]$
(l)	$\left(-\frac{x}{3} + \frac{9}{5}\right)\left(x^2 - \frac{3x}{5} - \frac{1}{2}\right) =$	$\left[-\frac{x^3}{3} + 2x^2 - \frac{137x}{150} - \frac{9}{10}\right]$
(m)	$(-x + 5)\left(\frac{7x^2}{9} + \frac{x}{7} - \frac{1}{2}\right) =$	$\left[-\frac{7x^3}{9} + \frac{236x^2}{63} + \frac{17x}{14} - \frac{5}{2}\right]$
(n)	$\left(-\frac{6x}{5} + \frac{7}{4}\right)\left(\frac{x^2}{2} + \frac{x}{2} + 1\right) =$	$\left[-\frac{3x^3}{5} + \frac{11x^2}{40} - \frac{13x}{40} + \frac{7}{4}\right]$
(o)	$\left(x^2 + \frac{8x}{5} - \frac{10}{11}\right)\left(-\frac{5x}{4} + \frac{1}{4}\right) =$	$\left[-\frac{5x^3}{4} - \frac{7x^2}{4} + \frac{169x}{110} - \frac{5}{22}\right]$
(p)	$\left(\frac{11x^2}{4} + \frac{3x}{4} + \frac{1}{3}\right)\left(\frac{x}{6} + \frac{10}{3}\right) =$	$\left[\frac{11x^3}{24} + \frac{223x^2}{24} + \frac{23x}{9} + \frac{10}{9}\right]$
(q)	$\left(-\frac{x}{12} - \frac{9}{5}\right)\left(\frac{4x^2}{3} + \frac{3x}{4} + \frac{2}{3}\right) =$	$\left[-\frac{x^3}{9} - \frac{197x^2}{80} - \frac{253x}{180} - \frac{6}{5}\right]$
(r)	$\left(-x^2 + \frac{x}{5} - \frac{1}{3}\right)\left(x^2 + \frac{x}{2} + \frac{11}{2}\right) =$	$\left[-x^4 - \frac{3x^3}{10} - \frac{86x^2}{15} + \frac{14x}{15} - \frac{11}{6}\right]$
(s)	$\left(\frac{5x}{11} + \frac{7}{3}\right)\left(-\frac{4x^2}{3} - \frac{2x}{5} + \frac{5}{3}\right) =$	$\left[-\frac{20x^3}{33} - \frac{326x^2}{99} - \frac{29x}{165} + \frac{35}{9}\right]$
(t)	$\left(-\frac{9x^2}{7} - \frac{2x}{7} + \frac{3}{11}\right)\left(-\frac{10x}{11} - \frac{3}{4}\right) =$	$\left[\frac{90x^3}{77} + \frac{377x^2}{308} - \frac{57x}{1694} - \frac{9}{44}\right]$
(u)	$\left(\frac{x^2}{2} - \frac{7x}{8} - \frac{1}{9}\right)\left(\frac{2x^2}{3} + 3x - 5\right) =$	$\left[\frac{x^4}{3} + \frac{11x^3}{12} - \frac{1123x^2}{216} + \frac{97x}{24} + \frac{5}{9}\right]$
(v)	$\left(-\frac{10x^2}{7} - \frac{x}{3} + \frac{1}{2}\right)\left(-4x^2 - 3x + \frac{2}{3}\right) =$	$\left[\frac{40x^4}{7} + \frac{118x^3}{21} - \frac{41x^2}{21} - \frac{31x}{18} + \frac{1}{3}\right]$
(w)	$\left(3x^2 + \frac{2x}{3} - \frac{7}{6}\right)\left(-\frac{2x^2}{9} - x + \frac{5}{8}\right) =$	$\left[-\frac{2x^4}{3} - \frac{85x^3}{27} + \frac{317x^2}{216} + \frac{19x}{12} - \frac{35}{48}\right]$
(x)	$\left(-\frac{6x^2}{5} + \frac{5x}{4} + \frac{6}{5}\right)\left(\frac{8x^2}{5} - \frac{5x}{7} + \frac{5}{6}\right) =$	$\left[-\frac{48x^4}{25} + \frac{20x^3}{7} + \frac{19x^2}{700} + \frac{31x}{168} + 1\right]$
(y)	$\left(-\frac{x^2}{6} - \frac{12x}{11} - \frac{3}{11}\right)\left(-\frac{7x^2}{12} + \frac{x}{2} + 2\right) =$	$\left[\frac{7x^4}{72} + \frac{73x^3}{132} - \frac{95x^2}{132} - \frac{51x}{22} - \frac{6}{11}\right]$
(z)	$\left(\frac{8x^2}{5} + \frac{5x}{3} - \frac{4}{11}\right)\left(\frac{4x^2}{3} + \frac{7x}{10} + \frac{5}{11}\right) =$	$\left[\frac{32x^4}{15} + \frac{752x^3}{225} + \frac{31x^2}{22} + \frac{83x}{165} - \frac{20}{121}\right]$

3. Calcola i prodotti del tipo somma per differenza.

(a)	$(x - 5)(x + 5) =$	$[x^2 - 25]$
(b)	$(x + 4)(x - 4) =$	$[x^2 - 16]$
(c)	$(x + 5)(x - 5) =$	$[x^2 - 25]$
(d)	$(x - 5)(x + 5) =$	$[x^2 - 25]$
(e)	$(5x - 1)(5x + 1) =$	$[25x^2 - 1]$
(f)	$(3x + 6)(3x - 6) =$	$[9x^2 - 36]$
(g)	$(3x + 6)(3x - 6) =$	$[9x^2 - 36]$
(h)	$(4x - 1)(4x + 1) =$	$[16x^2 - 1]$
(i)	$(2x - 6)(2x + 6) =$	$[4x^2 - 36]$
(j)	$(2x + 6)(2x - 6) =$	$[4x^2 - 36]$
(k)	$(5x + 2)(5x - 2) =$	$[25x^2 - 4]$
(l)	$(6x - 5)(6x + 5) =$	$[36x^2 - 25]$
(m)	$(6x + 5)(6x - 5) =$	$[36x^2 - 25]$
(n)	$(5x - 5)(5x + 5) =$	$[25x^2 - 25]$
(o)	$(-3x - 3)(-3x + 3) =$	$[9x^2 - 9]$
(p)	$(-2x - 2)(-2x + 2) =$	$[4x^2 - 4]$

(q)	$(-3x + 1)(-3x - 1) =$	$[9x^2 - 1]$
(r)	$(-4x + 1)(-4x - 1) =$	$[16x^2 - 1]$
(s)	$(-6x - 3)(-6x + 3) =$	$[36x^2 - 9]$
(t)	$(-5x + 2)(-5x - 2) =$	$[25x^2 - 4]$
(u)	$(-6x + 3)(-6x - 3) =$	$[36x^2 - 9]$
(v)	$(-3x - 4)(-3x + 4) =$	$[9x^2 - 16]$
(w)	$(-6x + 2)(-6x - 2) =$	$[36x^2 - 4]$
(x)	$(-3x - 5)(-3x + 5) =$	$[9x^2 - 25]$
(y)	$(-5x + 6)(-5x - 6) =$	$[25x^2 - 36]$
(z)	$(-4x - 6)(-4x + 6) =$	$[16x^2 - 36]$

4. Calcola i prodotti del tipo somma per differenza.

(a)	$(x - 2)(x + 2) =$	$[x^2 - 4]$
(b)	$(x + 1)(x - 1) =$	$[x^2 - 1]$
(c)	$(2x - 3)(2x + 3) =$	$[4x^2 - 9]$
(d)	$(6x - 2)(6x + 2) =$	$[36x^2 - 4]$
(e)	$\left(\frac{x}{3} + 2\right)\left(\frac{x}{3} - 2\right) =$	$\left[\frac{x^2}{9} - 4\right]$
(f)	$\left(x + \frac{3}{2}\right)\left(x - \frac{3}{2}\right) =$	$\left[x^2 - \frac{9}{4}\right]$
(g)	$\left(\frac{x}{2} - 4\right)\left(\frac{x}{2} + 4\right) =$	$\left[\frac{x^2}{4} - 16\right]$
(h)	$\left(\frac{x}{4} - 1\right)\left(\frac{x}{4} + 1\right) =$	$\left[\frac{x^2}{16} - 1\right]$
(i)	$\left(x - \frac{5}{4}\right)\left(x + \frac{5}{4}\right) =$	$\left[x^2 - \frac{25}{16}\right]$
(j)	$\left(-\frac{x}{3} + 3\right)\left(-\frac{x}{3} - 3\right) =$	$\left[\frac{x^2}{9} - 9\right]$
(k)	$\left(-\frac{x}{5} + 1\right)\left(-\frac{x}{5} - 1\right) =$	$\left[\frac{x^2}{25} - 1\right]$
(l)	$\left(-x + \frac{5}{3}\right)\left(-x - \frac{5}{3}\right) =$	$\left[x^2 - \frac{25}{9}\right]$
(m)	$\left(\frac{2x}{3} - 6\right)\left(\frac{2x}{3} + 6\right) =$	$\left[\frac{4x^2}{9} - 36\right]$
(n)	$\left(\frac{5x}{3} + 5\right)\left(\frac{5x}{3} - 5\right) =$	$\left[\frac{25x^2}{9} - 25\right]$
(o)	$\left(-3x + \frac{4}{3}\right)\left(-3x - \frac{4}{3}\right) =$	$\left[9x^2 - \frac{16}{9}\right]$
(p)	$\left(-\frac{6x}{5} + 3\right)\left(-\frac{6x}{5} - 3\right) =$	$\left[\frac{36x^2}{25} - 9\right]$
(q)	$\left(-\frac{4x}{5} - 2\right)\left(-\frac{4x}{5} + 2\right) =$	$\left[\frac{16x^2}{25} - 4\right]$
(r)	$\left(-\frac{4x}{3} - 6\right)\left(-\frac{4x}{3} + 6\right) =$	$\left[\frac{16x^2}{9} - 36\right]$
(s)	$\left(-\frac{5x}{4} - 6\right)\left(-\frac{5x}{4} + 6\right) =$	$\left[\frac{25x^2}{16} - 36\right]$
(t)	$\left(-\frac{x}{3} + \frac{5}{3}\right)\left(-\frac{x}{3} - \frac{5}{3}\right) =$	$\left[\frac{x^2}{9} - \frac{25}{9}\right]$
(u)	$\left(-\frac{x}{2} + \frac{3}{4}\right)\left(-\frac{x}{2} - \frac{3}{4}\right) =$	$\left[\frac{x^2}{4} - \frac{9}{16}\right]$
(v)	$\left(-\frac{x}{3} + \frac{2}{5}\right)\left(-\frac{x}{3} - \frac{2}{5}\right) =$	$\left[\frac{x^2}{9} - \frac{4}{25}\right]$
(w)	$\left(\frac{2x}{5} - \frac{1}{2}\right)\left(\frac{2x}{5} + \frac{1}{2}\right) =$	$\left[\frac{4x^2}{25} - \frac{1}{4}\right]$
(x)	$\left(\frac{5x}{6} - \frac{2}{3}\right)\left(\frac{5x}{6} + \frac{2}{3}\right) =$	$\left[\frac{25x^2}{36} - \frac{4}{9}\right]$
(y)	$\left(\frac{4x}{3} + \frac{4}{5}\right)\left(\frac{4x}{3} - \frac{4}{5}\right) =$	$\left[\frac{16x^2}{9} - \frac{16}{25}\right]$
(z)	$\left(-\frac{2x}{3} - \frac{1}{4}\right)\left(-\frac{2x}{3} + \frac{1}{4}\right) =$	$\left[\frac{4x^2}{9} - \frac{1}{16}\right]$

5. Calcola i seguenti quadrati di binomi.

(a) $(x-2)^2$	$[x^2 - 4x + 4]$
(b) $(-x-1)^2$	$[x^2 + 2x + 1]$
(c) $(-x+3)^2$	$[x^2 - 6x + 9]$
(d) $(-x-6)^2$	$[x^2 + 12x + 36]$
(e) $(-x+5)^2$	$[x^2 - 10x + 25]$
(f) $(3x-1)^2$	$[9x^2 - 6x + 1]$
(g) $(-x-6)^2$	$[x^2 + 12x + 36]$
(h) $(2x+3)^2$	$[4x^2 + 12x + 9]$
(i) $(-2x+2)^2$	$[4x^2 - 8x + 4]$
(j) $(5x-3)^2$	$[25x^2 - 30x + 9]$
(k) $(2x+6)^2$	$[4x^2 + 24x + 36]$
(l) $(4x+2)^2$	$[16x^2 + 16x + 4]$
(m) $(5x-6)^2$	$[25x^2 - 60x + 36]$
(n) $(5x-4)^2$	$[25x^2 - 40x + 16]$
(o) $(6x+6)^2$	$[36x^2 + 72x + 36]$
(p) $(4x-4)^2$	$[16x^2 - 32x + 16]$
(q) $(-2x-3)^2$	$[4x^2 + 12x + 9]$
(r) $(5x-4)^2$	$[25x^2 - 40x + 16]$
(s) $(5x-4)^2$	$[25x^2 - 40x + 16]$
(t) $(-2x+4)^2$	$[4x^2 - 16x + 16]$
(u) $(-5x-2)^2$	$[25x^2 + 20x + 4]$
(v) $(-4x+2)^2$	$[16x^2 - 16x + 4]$
(w) $(-5x-3)^2$	$[25x^2 + 30x + 9]$
(x) $(-6x+5)^2$	$[36x^2 - 60x + 25]$
(y) $(-4x+4)^2$	$[16x^2 - 32x + 16]$
(z) $(-5x+4)^2$	$[25x^2 - 40x + 16]$

6. Calcola i seguenti quadrati di binomi.

(a) $(x+2)^2$	$[x^2 + 4x + 4]$
(b) $(-x+3)^2$	$[x^2 - 6x + 9]$
(c) $(-x+2)^2$	$[x^2 - 4x + 4]$
(d) $(4x-1)^2$	$[16x^2 - 8x + 1]$
(e) $(\frac{3x}{2}-3)^2$	$[\frac{9x^2}{4} - 9x + 9]$
(f) $(\frac{3x}{2}+2)^2$	$[\frac{9x^2}{4} + 6x + 4]$
(g) $(6x+\frac{1}{2})^2$	$[36x^2 + 6x + \frac{1}{4}]$
(h) $(\frac{3x}{2}+6)^2$	$[\frac{9x^2}{4} + 18x + 36]$
(i) $(-\frac{4x}{3}-3)^2$	$[\frac{16x^2}{9} + 8x + 9]$
(j) $(-4x-\frac{3}{2})^2$	$[16x^2 + 12x + \frac{9}{4}]$

(k)	$\left(\frac{x}{6} - 2\right)^2$	$\left[\frac{x^2}{36} - \frac{2x}{3} + 4\right]$
(l)	$\left(-x + \frac{1}{3}\right)^2$	$\left[x^2 - \frac{2x}{3} + \frac{1}{9}\right]$
(m)	$\left(\frac{5x}{4} + 1\right)^2$	$\left[\frac{25x^2}{16} + \frac{5x}{2} + 1\right]$
(n)	$\left(-\frac{5x}{4} + 1\right)^2$	$\left[\frac{25x^2}{16} - \frac{5x}{2} + 1\right]$
(o)	$\left(-2x - \frac{5}{3}\right)^2$	$\left[4x^2 + \frac{20x}{3} + \frac{25}{9}\right]$
(p)	$\left(-3x + \frac{5}{4}\right)^2$	$\left[9x^2 - \frac{15x}{2} + \frac{25}{16}\right]$
(q)	$\left(-\frac{4x}{3} - \frac{3}{4}\right)^2$	$\left[\frac{16x^2}{9} + 2x + \frac{9}{16}\right]$
(r)	$\left(\frac{x}{3} + \frac{1}{4}\right)^2$	$\left[\frac{x^2}{9} + \frac{x}{6} + \frac{1}{16}\right]$
(s)	$\left(\frac{x}{5} - \frac{1}{2}\right)^2$	$\left[\frac{x^2}{25} - \frac{x}{5} + \frac{1}{4}\right]$
(t)	$\left(-\frac{x}{2} + \frac{1}{3}\right)^2$	$\left[\frac{x^2}{4} - \frac{x}{3} + \frac{1}{9}\right]$
(u)	$\left(\frac{x}{3} + \frac{2}{3}\right)^2$	$\left[\frac{x^2}{9} + \frac{4x}{9} + \frac{4}{9}\right]$
(v)	$\left(-\frac{x}{4} - \frac{1}{2}\right)^2$	$\left[\frac{x^2}{16} + \frac{x}{4} + \frac{1}{4}\right]$
(w)	$\left(\frac{x}{5} - \frac{4}{5}\right)^2$	$\left[\frac{x^2}{25} - \frac{8x}{25} + \frac{16}{25}\right]$
(x)	$\left(-\frac{2x}{3} + \frac{1}{3}\right)^2$	$\left[\frac{4x^2}{9} - \frac{4x}{9} + \frac{1}{9}\right]$
(y)	$\left(\frac{3x}{4} + \frac{5}{2}\right)^2$	$\left[\frac{9x^2}{16} + \frac{15x}{4} + \frac{25}{4}\right]$
(z)	$\left(\frac{5x}{4} - \frac{3}{4}\right)^2$	$\left[\frac{25x^2}{16} - \frac{15x}{8} + \frac{9}{16}\right]$

7. Calcola i seguenti quadrati di trinomi.

(a)	$(x^2 - x + 4)^2$	$[x^4 - 2x^3 + 9x^2 - 8x + 16]$
(b)	$(x^2 + 3x + 1)^2$	$[x^4 + 6x^3 + 11x^2 + 6x + 1]$
(c)	$(2x^2 + x + 1)^2$	$[4x^4 + 4x^3 + 5x^2 + 2x + 1]$
(d)	$(x^2 - 5x + 6)^2$	$[x^4 - 10x^3 + 37x^2 - 60x + 36]$
(e)	$(-2x^2 + x - 2)^2$	$[4x^4 - 4x^3 + 9x^2 - 4x + 4]$
(f)	$(2x^2 - 2x - 3)^2$	$[4x^4 - 8x^3 - 8x^2 + 12x + 9]$
(g)	$(-x^2 - 5x - 1)^2$	$[x^4 + 10x^3 + 27x^2 + 10x + 1]$
(h)	$(-4x^2 + x + 2)^2$	$[16x^4 - 8x^3 - 15x^2 + 4x + 4]$
(i)	$(-4x^2 + 3x + 1)^2$	$[16x^4 - 24x^3 + x^2 + 6x + 1]$
(j)	$(3x^2 - 2x + 1)^2$	$[9x^4 - 12x^3 + 10x^2 - 4x + 1]$
(k)	$(-6x^2 + x - 1)^2$	$[36x^4 - 12x^3 + 13x^2 - 2x + 1]$
(l)	$(3x^2 - 6x + 2)^2$	$[9x^4 - 36x^3 + 48x^2 - 24x + 4]$
(m)	$(5x^2 + 3x + 1)^2$	$[25x^4 + 30x^3 + 19x^2 + 6x + 1]$
(n)	$(6x^2 + 6x - 1)^2$	$[36x^4 + 72x^3 + 24x^2 - 12x + 1]$
(o)	$(2x^2 + 6x + 4)^2$	$[4x^4 + 24x^3 + 52x^2 + 48x + 16]$
(p)	$(-3x^2 - 3x + 2)^2$	$[9x^4 + 18x^3 - 3x^2 - 12x + 4]$
(q)	$(5x^2 - 3x - 5)^2$	$[25x^4 - 30x^3 - 41x^2 + 30x + 25]$
(r)	$(4x^2 + 2x + 4)^2$	$[16x^4 + 16x^3 + 36x^2 + 16x + 16]$

- (s) $(-5x^2 - 2x + 2)^2$
 (t) $(5x^2 - 4x + 4)^2$
 (u) $(4x^2 + 5x - 5)^2$
 (v) $(4x^2 - 2x + 4)^2$
 (w) $(-3x^2 - 2x - 6)^2$
 (x) $(-6x^2 + 6x + 2)^2$
 (y) $(-4x^2 - 2x + 6)^2$
 (z) $(-5x^2 - 2x - 6)^2$

$$[25x^4 + 20x^3 - 16x^2 - 8x + 4]$$

$$[25x^4 - 40x^3 + 56x^2 - 32x + 16]$$

$$[16x^4 + 40x^3 - 15x^2 - 50x + 25]$$

$$[16x^4 - 16x^3 + 36x^2 - 16x + 16]$$

$$[9x^4 + 12x^3 + 40x^2 + 24x + 36]$$

$$[36x^4 - 72x^3 + 12x^2 + 24x + 4]$$

$$[16x^4 + 16x^3 - 44x^2 - 24x + 36]$$

$$[25x^4 + 20x^3 + 64x^2 + 24x + 36]$$

8. Calcola i seguenti quadrati di trinomi.

- (a) $(-x^2 - x + 4)^2$
 (b) $(-\frac{x^2}{2} - 2x + 3)^2$
 (c) $(-\frac{x^2}{2} - 2x + 2)^2$
 (d) $(-\frac{3x^2}{2} + x + 1)^2$
 (e) $(-6x^2 - x - \frac{5}{2})^2$
 (f) $(-4x^2 + 2x - \frac{5}{4})^2$
 (g) $(-3x^2 - \frac{2x}{3} + 1)^2$
 (h) $(-3x^2 - 4x + \frac{5}{4})^2$
 (i) $(\frac{5x^2}{3} - x - 5)^2$
 (j) $(-\frac{2x^2}{5} - x - 6)^2$
 (k) $(-\frac{4x^2}{5} + x - 4)^2$
 (l) $(-\frac{5x^2}{6} - 5x + 2)^2$
 (m) $(-\frac{5x^2}{6} + \frac{x}{2} - 1)^2$
 (n) $(-\frac{x^2}{6} + x + \frac{1}{2})^2$
 (o) $(-\frac{x^2}{3} - \frac{x}{6} - 2)^2$
 (p) $(-\frac{x^2}{5} + \frac{2x}{3} + 1)^2$
 (q) $(\frac{6x^2}{5} + \frac{2x}{3} - 2)^2$
 (r) $(\frac{5x^2}{3} - \frac{5x}{4} + 1)^2$
 (s) $(\frac{x^2}{3} - 2x - \frac{2}{3})^2$
 (t) $(-\frac{6x^2}{5} - \frac{6x}{5} + 1)^2$
 (u) $(-\frac{5x^2}{4} + x - \frac{1}{6})^2$
 (v) $(-\frac{5x^2}{2} + \frac{3x}{5} + \frac{3}{2})^2$

$$[x^4 + 2x^3 - 7x^2 - 8x + 16]$$

$$[\frac{x^4}{4} + 2x^3 + x^2 - 12x + 9]$$

$$[\frac{x^4}{4} + 2x^3 + 2x^2 - 8x + 4]$$

$$[\frac{9x^4}{4} - 3x^3 - 2x^2 + 2x + 1]$$

$$[36x^4 + 12x^3 + 31x^2 + 5x + \frac{25}{4}]$$

$$[16x^4 - 16x^3 + 14x^2 - 5x + \frac{25}{16}]$$

$$[9x^4 + 4x^3 - \frac{50x^2}{9} - \frac{4x}{3} + 1]$$

$$[9x^4 + 24x^3 + \frac{17x^2}{2} - 10x + \frac{25}{16}]$$

$$[\frac{25x^4}{9} - \frac{10x^3}{3} - \frac{47x^2}{3} + 10x + 25]$$

$$[\frac{4x^4}{25} + \frac{4x^3}{5} + \frac{29x^2}{5} + 12x + 36]$$

$$[\frac{16x^4}{25} - \frac{8x^3}{5} + \frac{37x^2}{5} - 8x + 16]$$

$$[\frac{25x^4}{36} + \frac{25x^3}{3} + \frac{65x^2}{3} - 20x + 4]$$

$$[\frac{25x^4}{36} - \frac{5x^3}{6} + \frac{23x^2}{12} - x + 1]$$

$$[\frac{x^4}{36} - \frac{x^3}{3} + \frac{5x^2}{6} + x + \frac{1}{4}]$$

$$[\frac{x^4}{9} + \frac{x^3}{9} + \frac{49x^2}{36} + \frac{2x}{3} + 4]$$

$$[\frac{x^4}{25} - \frac{4x^3}{15} + \frac{2x^2}{45} + \frac{4x}{3} + 1]$$

$$[\frac{36x^4}{25} + \frac{8x^3}{5} - \frac{196x^2}{45} - \frac{8x}{3} + 4]$$

$$[\frac{25x^4}{9} - \frac{25x^3}{6} + \frac{235x^2}{48} - \frac{5x}{2} + 1]$$

$$[\frac{x^4}{9} - \frac{4x^3}{3} + \frac{32x^2}{9} + \frac{8x}{3} + \frac{4}{9}]$$

$$[\frac{36x^4}{25} + \frac{72x^3}{25} - \frac{24x^2}{25} - \frac{12x}{5} + 1]$$

$$[\frac{25x^4}{16} - \frac{5x^3}{2} + \frac{17x^2}{12} - \frac{x}{3} + \frac{1}{36}]$$

$$[\frac{25x^4}{4} - 3x^3 - \frac{357x^2}{50} + \frac{9x}{5} + \frac{9}{4}]$$

$$(w) \left(-\frac{x^2}{3} - \frac{3x}{4} - \frac{1}{3}\right)^2$$

$$(x) \left(-\frac{5x^2}{6} - \frac{x}{2} + \frac{1}{4}\right)^2$$

$$(y) \left(\frac{x^2}{2} + \frac{6x}{5} - \frac{4}{3}\right)^2$$

$$(z) \left(\frac{3x^2}{4} + \frac{5x}{6} + \frac{5}{6}\right)^2$$

$$\left[\frac{x^4}{9} + \frac{x^3}{2} + \frac{113x^2}{144} + \frac{x}{2} + \frac{1}{9}\right]$$

$$\left[\frac{25x^4}{36} + \frac{5x^3}{6} - \frac{x^2}{6} - \frac{x}{4} + \frac{1}{16}\right]$$

$$\left[\frac{x^4}{4} + \frac{6x^3}{5} + \frac{8x^2}{75} - \frac{16x}{5} + \frac{16}{9}\right]$$

$$\left[\frac{9x^4}{16} + \frac{5x^3}{4} + \frac{35x^2}{18} + \frac{25x}{18} + \frac{25}{36}\right]$$

9. Calcola i seguenti prodotti di binomi particolari.

$$(a) (x-3)(x+3) =$$

$$[x^2 - 9]$$

$$(b) (x+4)(x-4) =$$

$$[x^2 - 16]$$

$$(c) (x+4)(x-4) =$$

$$[x^2 - 16]$$

$$(d) (x-6)(x+6) =$$

$$[x^2 - 36]$$

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

$$[x^2 + x - 6]$$

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

$$[x^2 + x - 6]$$

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

$$[x^2 + x - 6]$$

$$(h) (x+5)(x-6) =$$

$$[x^2 - x - 30]$$

$$(i) (x-1)(x-4) =$$

$$[x^2 - 5x + 4]$$

$$(j) (x+1)(x-3) =$$

$$[x^2 - 2x - 3]$$

$$(k) (x-1)(x-5) =$$

$$[x^2 - 6x + 5]$$

$$(l) (x+1)(x+2) =$$

$$[x^2 + 3x + 2]$$

$$(m) (x-1)(x+4) =$$

$$[x^2 + 3x - 4]$$

$$(n) (x+1)(x+5) =$$

$$[x^2 + 6x + 5]$$

$$(o) (x+3)(x+3) =$$

$$[x^2 + 6x + 9]$$

$$(p) (x-6)(x-1) =$$

$$[x^2 - 7x + 6]$$

$$(q) (x+6)(x+1) =$$

$$[x^2 + 7x + 6]$$

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

$$[x^2 + 7x + 10]$$

$$(s) (x+3)(x+4) =$$

$$[x^2 + 7x + 12]$$

$$(t) (x-4)(x-4) =$$

$$[x^2 - 8x + 16]$$

$$(u) (x+3)(x-6) =$$

$$[x^2 - 3x - 18]$$

$$(v) (x+4)(x+4) =$$

$$[x^2 + 8x + 16]$$

$$(w) (x-4)(x-4) =$$

$$[x^2 - 8x + 16]$$

$$(x) (x-3)(x-4) =$$

$$[x^2 - 7x + 12]$$

$$(y) (x+6)(x+4) =$$

$$[x^2 + 10x + 24]$$

$$(z) (x-6)(x-5) =$$

$$[x^2 - 11x + 30]$$

10. Calcola i seguenti prodotti di binomi particolari.

$$(a) (x+2)(x-4) =$$

$$[x^2 - 2x - 8]$$

$$(b) (x+1)(x-5) =$$

$$[x^2 - 4x - 5]$$

$$(c) (x-3)(x-4) =$$

$$[x^2 - 7x + 12]$$

$$(d) (x-3)\left(x + \frac{2}{3}\right) =$$

$$\left[x^2 - \frac{7x}{3} - 2\right]$$

$$(e) (x+1)\left(x - \frac{4}{3}\right) =$$

$$\left[x^2 - \frac{x}{3} - \frac{4}{3}\right]$$

(f) $(x+1)\left(x-\frac{4}{5}\right) =$	$\left[x^2 + \frac{x}{5} - \frac{4}{5}\right]$
(g) $\left(x + \frac{2}{5}\right)(x-1) =$	$\left[x^2 - \frac{3x}{5} - \frac{2}{5}\right]$
(h) $\left(x - \frac{4}{3}\right)\left(x - \frac{2}{3}\right) =$	$\left[x^2 - 2x + \frac{8}{9}\right]$
(i) $(x-1)\left(x - \frac{3}{5}\right) =$	$\left[x^2 - \frac{8x}{5} + \frac{3}{5}\right]$
(j) $\left(x + \frac{2}{5}\right)(x+1) =$	$\left[x^2 + \frac{7x}{5} + \frac{2}{5}\right]$
(k) $\left(x - \frac{5}{2}\right)(x-1) =$	$\left[x^2 - \frac{7x}{2} + \frac{5}{2}\right]$
(l) $(x-1)\left(x - \frac{2}{5}\right) =$	$\left[x^2 - \frac{7x}{5} + \frac{2}{5}\right]$
(m) $(x-2)\left(x - \frac{2}{5}\right) =$	$\left[x^2 - \frac{12x}{5} + \frac{4}{5}\right]$
(n) $(x+3)\left(x + \frac{1}{6}\right) =$	$\left[x^2 + \frac{19x}{6} + \frac{1}{2}\right]$
(o) $\left(x + \frac{6}{5}\right)(x-2) =$	$\left[x^2 - \frac{4x}{5} - \frac{12}{5}\right]$
(p) $\left(x + \frac{4}{3}\right)\left(x - \frac{3}{4}\right) =$	$\left[x^2 + \frac{7x}{12} - 1\right]$
(q) $\left(x - \frac{4}{5}\right)(x+6) =$	$\left[x^2 + \frac{26x}{5} - \frac{24}{5}\right]$
(r) $\left(x + \frac{2}{5}\right)\left(x - \frac{1}{5}\right) =$	$\left[x^2 + \frac{x}{5} - \frac{2}{25}\right]$
(s) $\left(x - \frac{4}{3}\right)\left(x + \frac{5}{3}\right) =$	$\left[x^2 + \frac{x}{3} - \frac{20}{9}\right]$
(t) $\left(x + \frac{4}{5}\right)\left(x - \frac{5}{6}\right) =$	$\left[x^2 - \frac{x}{30} - \frac{2}{3}\right]$
(u) $\left(x - \frac{2}{3}\right)\left(x - \frac{2}{3}\right) =$	$\left[x^2 - \frac{4x}{3} + \frac{4}{9}\right]$
(v) $\left(x - \frac{2}{5}\right)\left(x - \frac{1}{2}\right) =$	$\left[x^2 - \frac{9x}{10} + \frac{1}{5}\right]$
(w) $\left(x - \frac{1}{4}\right)\left(x + \frac{2}{3}\right) =$	$\left[x^2 + \frac{5x}{12} - \frac{1}{6}\right]$
(x) $\left(x + \frac{5}{4}\right)\left(x + \frac{5}{2}\right) =$	$\left[x^2 + \frac{15x}{4} + \frac{25}{8}\right]$
(y) $\left(x - \frac{1}{6}\right)\left(x + \frac{6}{5}\right) =$	$\left[x^2 + \frac{31x}{30} - \frac{1}{5}\right]$
(z) $\left(x - \frac{1}{4}\right)\left(x - \frac{3}{5}\right) =$	$\left[x^2 - \frac{17x}{20} + \frac{3}{20}\right]$

11. Calcola i seguenti cubi di binomi.

(a) $(x-2)^3$	$[x^3 - 6x^2 + 12x - 8]$
(b) $(x-4)^3$	$[x^3 - 12x^2 + 48x - 64]$
(c) $(-x-1)^3$	$[-x^3 - 3x^2 - 3x - 1]$
(d) $(-x+1)^3$	$[-x^3 + 3x^2 - 3x + 1]$
(e) $(-x+1)^3$	$[-x^3 + 3x^2 - 3x + 1]$
(f) $(-x-2)^3$	$[-x^3 - 6x^2 - 12x - 8]$
(g) $(2x+1)^3$	$[8x^3 + 12x^2 + 6x + 1]$
(h) $(-x+2)^3$	$[-x^3 + 6x^2 - 12x + 8]$
(i) $(-x+3)^3$	$[-x^3 + 9x^2 - 27x + 27]$
(j) $(-x+3)^3$	$[-x^3 + 9x^2 - 27x + 27]$
(k) $(3x+2)^3$	$[27x^3 + 54x^2 + 36x + 8]$
(l) $(2x+3)^3$	$[8x^3 + 36x^2 + 54x + 27]$
(m) $(-x+4)^3$	$[-x^3 + 12x^2 - 48x + 64]$
(n) $(-x-4)^3$	$[-x^3 - 12x^2 - 48x - 64]$
(o) $(3x-4)^3$	$[27x^3 - 108x^2 + 144x - 64]$
(p) $(4x+4)^3$	$[64x^3 + 192x^2 + 192x + 64]$
(q) $(3x+4)^3$	$[27x^3 + 108x^2 + 144x + 64]$

(r) $(4x-3)^3$	$[64x^3 - 144x^2 + 108x - 27]$
(s) $(-3x-2)^3$	$[-27x^3 - 54x^2 - 36x - 8]$
(t) $(-2x+3)^3$	$[-8x^3 + 36x^2 - 54x + 27]$
(u) $(-4x-1)^3$	$[-64x^3 - 48x^2 - 12x - 1]$
(v) $(-4x-1)^3$	$[-64x^3 - 48x^2 - 12x - 1]$
(w) $(-3x-3)^3$	$[-27x^3 - 81x^2 - 81x - 27]$
(x) $(-3x+4)^3$	$[-27x^3 + 108x^2 - 144x + 64]$
(y) $(-3x+4)^3$	$[-27x^3 + 108x^2 - 144x + 64]$
(z) $(-3x+4)^3$	$[-27x^3 + 108x^2 - 144x + 64]$

12. Calcola i seguenti cubi di binomi.

(a) $(x-1)^3$	$[x^3 - 3x^2 + 3x - 1]$
(b) $(-x+1)^3$	$[-x^3 + 3x^2 - 3x + 1]$
(c) $(2x-1)^3$	$[8x^3 - 12x^2 + 6x - 1]$
(d) $(2x-2)^3$	$[8x^3 - 24x^2 + 24x - 8]$
(e) $(\frac{3x}{2}+4)^3$	$[\frac{27x^3}{8} + 27x^2 + 72x + 64]$
(f) $(-3x-\frac{2}{3})^3$	$[-27x^3 - 18x^2 - 4x - \frac{8}{27}]$
(g) $(-3x+\frac{4}{3})^3$	$[-27x^3 + 36x^2 - 16x + \frac{64}{27}]$
(h) $(\frac{2x}{3}-1)^3$	$[\frac{8x^3}{27} - \frac{4x^2}{3} + 2x - 1]$
(i) $(\frac{3x}{2}-2)^3$	$[\frac{27x^3}{8} - \frac{27x^2}{2} + 18x - 8]$
(j) $(-\frac{x}{3}+4)^3$	$[-\frac{x^3}{27} + \frac{4x^2}{3} - 16x + 64]$
(k) $(\frac{4x}{3}+2)^3$	$[\frac{64x^3}{27} + \frac{32x^2}{3} + 16x + 8]$
(l) $(-\frac{2x}{3}+1)^3$	$[-\frac{8x^3}{27} + \frac{4x^2}{3} - 2x + 1]$
(m) $(\frac{x}{2}-1)^3$	$[\frac{x^3}{8} - \frac{3x^2}{4} + \frac{3x}{2} - 1]$
(n) $(-4x-\frac{1}{3})^3$	$[-64x^3 - 16x^2 - \frac{4x}{3} - \frac{1}{27}]$
(o) $(x+\frac{1}{4})^3$	$[x^3 + \frac{3x^2}{4} + \frac{3x}{16} + \frac{1}{64}]$
(p) $(-4x-\frac{2}{3})^3$	$[-64x^3 - 32x^2 - \frac{16x}{3} - \frac{8}{27}]$
(q) $(-x+\frac{1}{2})^3$	$[-x^3 + \frac{3x^2}{2} - \frac{3x}{4} + \frac{1}{8}]$
(r) $(-\frac{x}{2}+1)^3$	$[-\frac{x^3}{8} + \frac{3x^2}{4} - \frac{3x}{2} + 1]$
(s) $(x-\frac{3}{4})^3$	$[x^3 - \frac{9x^2}{4} + \frac{27x}{16} - \frac{27}{64}]$
(t) $(-\frac{x}{4}-3)^3$	$[-\frac{x^3}{64} - \frac{9x^2}{16} - \frac{27x}{4} - 27]$
(u) $(\frac{x}{2}+\frac{1}{3})^3$	$[\frac{x^3}{8} + \frac{x^2}{4} + \frac{x}{6} + \frac{1}{27}]$
(v) $(-\frac{x}{2}+\frac{2}{3})^3$	$[-\frac{x^3}{8} + \frac{x^2}{2} - \frac{2x}{3} + \frac{8}{27}]$
(w) $(\frac{4x}{3}+\frac{1}{4})^3$	$[\frac{64x^3}{27} + \frac{4x^2}{3} + \frac{x}{4} + \frac{1}{64}]$
(x) $(\frac{4x}{3}+\frac{1}{3})^3$	$[\frac{64x^3}{27} + \frac{16x^2}{9} + \frac{4x}{9} + \frac{1}{27}]$
(y) $(-\frac{x}{4}-\frac{1}{4})^3$	$[-\frac{x^3}{64} - \frac{3x^2}{64} - \frac{3x}{64} - \frac{1}{64}]$
(z) $(-\frac{3x}{4}+\frac{3}{2})^3$	$[-\frac{27x^3}{64} + \frac{81x^2}{32} - \frac{81x}{16} + \frac{27}{8}]$

13. Calcola le seguenti potenze di binomi.

(a) $(x-1)^4$	$[x^4 - 4x^3 + 6x^2 - 4x + 1]$
(b) $(-x-1)^4$	$[x^4 + 4x^3 + 6x^2 + 4x + 1]$
(c) $(x+3)^4$	$[x^4 + 12x^3 + 54x^2 + 108x + 81]$
(d) $(x+3)^4$	$[x^4 + 12x^3 + 54x^2 + 108x + 81]$
(e) $(-x-2)^4$	$[x^4 + 8x^3 + 24x^2 + 32x + 16]$
(f) $(-x-3)^4$	$[x^4 + 12x^3 + 54x^2 + 108x + 81]$
(g) $(2x-2)^4$	$[16x^4 - 64x^3 + 96x^2 - 64x + 16]$
(h) $(3x-2)^4$	$[81x^4 - 216x^3 + 216x^2 - 96x + 16]$
(i) $(-3x-1)^4$	$[81x^4 + 108x^3 + 54x^2 + 12x + 1]$
(j) $(-3x-1)^4$	$[81x^4 + 108x^3 + 54x^2 + 12x + 1]$
(k) $(-2x-2)^4$	$[16x^4 + 64x^3 + 96x^2 + 64x + 16]$
(l) $(3x-3)^4$	$[81x^4 - 324x^3 + 486x^2 - 324x + 81]$
(m) $(-2x+3)^4$	$[16x^4 - 96x^3 + 216x^2 - 216x + 81]$
(n) $(-2x+3)^4$	$[16x^4 - 96x^3 + 216x^2 - 216x + 81]$
(o) $(-2x-3)^4$	$[16x^4 + 96x^3 + 216x^2 + 216x + 81]$
(p) $(-x+1)^5$	$[-x^5 + 5x^4 - 10x^3 + 10x^2 - 5x + 1]$
(q) $(-x+2)^5$	$[-x^5 + 10x^4 - 40x^3 + 80x^2 - 80x + 32]$
(r) $(2x-1)^5$	$[32x^5 - 80x^4 + 80x^3 - 40x^2 + 10x - 1]$
(s) $(-x+2)^5$	$[-x^5 + 10x^4 - 40x^3 + 80x^2 - 80x + 32]$
(t) $(-x-3)^5$	$[-x^5 - 15x^4 - 90x^3 - 270x^2 - 405x - 243]$
(u) $(-x-3)^5$	$[-x^5 - 15x^4 - 90x^3 - 270x^2 - 405x - 243]$
(v) $(-2x+1)^5$	$[-32x^5 + 80x^4 - 80x^3 + 40x^2 - 10x + 1]$
(w) $(-3x-1)^5$	$[-243x^5 - 405x^4 - 270x^3 - 90x^2 - 15x - 1]$
(x) $(-2x+2)^5$	$[-32x^5 + 160x^4 - 320x^3 + 320x^2 - 160x + 32]$
(y) $(3x-3)^5$	$[243x^5 - 1215x^4 + 2430x^3 - 2430x^2 + 1215x - 243]$
(z) $(-2x-3)^5$	$[-32x^5 - 240x^4 - 720x^3 - 1080x^2 - 810x - 243]$

14. Calcola le seguenti potenze di binomi.

(a) $(x+1)^4$	$[x^4 + 4x^3 + 6x^2 + 4x + 1]$
(b) $(x+1)^4$	$[x^4 + 4x^3 + 6x^2 + 4x + 1]$
(c) $(-x-1)^4$	$[x^4 + 4x^3 + 6x^2 + 4x + 1]$
(d) $(-x-1)^4$	$[x^4 + 4x^3 + 6x^2 + 4x + 1]$
(e) $(x+1)^5$	$[x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1]$
(f) $(x-2)^5$	$[x^5 - 10x^4 + 40x^3 - 80x^2 + 80x - 32]$
(g) $(x-3)^5$	$[x^5 - 15x^4 + 90x^3 - 270x^2 + 405x - 243]$
(h) $(2x-1)^5$	$[32x^5 - 80x^4 + 80x^3 - 40x^2 + 10x - 1]$
(i) $\left(\frac{x}{2}-1\right)^4$	$\left[\frac{x^4}{16} - \frac{x^3}{2} + \frac{3x^2}{2} - 2x + 1\right]$
(j) $\left(x-\frac{3}{2}\right)^4$	$\left[x^4 - 6x^3 + \frac{27x^2}{2} - \frac{27x}{2} + \frac{81}{16}\right]$
(k) $\left(2x-\frac{1}{2}\right)^5$	$\left[32x^5 - 40x^4 + 20x^3 - 5x^2 + \frac{5x}{8} - \frac{1}{32}\right]$

(l)	$(\frac{3x}{2} - 1)^4$	$[\frac{81x^4}{16} - \frac{27x^3}{2} + \frac{27x^2}{2} - 6x + 1]$
(m)	$(x + \frac{1}{3})^4$	$[x^4 + \frac{4x^3}{3} + \frac{2x^2}{3} + \frac{4x}{27} + \frac{1}{81}]$
(n)	$(-x - \frac{1}{3})^4$	$[x^4 + \frac{4x^3}{3} + \frac{2x^2}{3} + \frac{4x}{27} + \frac{1}{81}]$
(o)	$(\frac{2x}{3} - 1)^4$	$[\frac{16x^4}{81} - \frac{32x^3}{27} + \frac{8x^2}{3} - \frac{8x}{3} + 1]$
(p)	$(-\frac{2x}{3} - 1)^4$	$[\frac{16x^4}{81} + \frac{32x^3}{27} + \frac{8x^2}{3} + \frac{8x}{3} + 1]$
(q)	$(-\frac{2x}{3} - 2)^4$	$[\frac{16x^4}{81} + \frac{64x^3}{27} + \frac{32x^2}{3} + \frac{64x}{3} + 16]$
(r)	$(\frac{x}{2} + \frac{1}{2})^4$	$[\frac{x^4}{16} + \frac{x^3}{4} + \frac{3x^2}{8} + \frac{x}{4} + \frac{1}{16}]$
(s)	$(x + \frac{1}{2})^5$	$[x^5 + \frac{5x^4}{2} + \frac{5x^3}{2} + \frac{5x^2}{4} + \frac{5x}{16} + \frac{1}{32}]$
(t)	$(x - \frac{2}{3})^5$	$[x^5 - \frac{10x^4}{3} + \frac{40x^3}{9} - \frac{80x^2}{27} + \frac{80x}{81} - \frac{32}{243}]$
(u)	$(-\frac{3x}{2} + \frac{1}{2})^4$	$[\frac{81x^4}{16} - \frac{27x^3}{4} + \frac{27x^2}{8} - \frac{3x}{4} + \frac{1}{16}]$
(v)	$(-\frac{2x}{3} - 1)^5$	$[-\frac{32x^5}{243} - \frac{80x^4}{81} - \frac{80x^3}{27} - \frac{40x^2}{9} - \frac{10x}{3} - 1]$
(w)	$(-\frac{2x}{3} + 1)^5$	$[-\frac{32x^5}{243} + \frac{80x^4}{81} - \frac{80x^3}{27} + \frac{40x^2}{9} - \frac{10x}{3} + 1]$
(x)	$(\frac{x}{2} - \frac{1}{2})^5$	$[\frac{x^5}{32} - \frac{5x^4}{32} + \frac{5x^3}{16} - \frac{5x^2}{16} + \frac{5x}{32} - \frac{1}{32}]$
(y)	$(-\frac{x}{3} - \frac{1}{2})^5$	$[-\frac{x^5}{243} - \frac{5x^4}{162} - \frac{5x^3}{54} - \frac{5x^2}{36} - \frac{5x}{48} - \frac{1}{32}]$
(z)	$(\frac{3x}{2} - \frac{1}{3})^5$	$[\frac{243x^5}{32} - \frac{135x^4}{16} + \frac{15x^3}{4} - \frac{5x^2}{6} + \frac{5x}{54} - \frac{1}{243}]$

15. Esegui i seguenti prodotti.

(a)	$(2x - 4)(2x + 4) =$	$[4x^2 - 16]$
(b)	$(x - 2)(x - \frac{1}{2}) =$	$[x^2 - \frac{5x}{2} + 1]$
(c)	$(-4x^2 + 4x - 5)^2$	$[16x^4 - 32x^3 + 56x^2 - 40x + 25]$
(d)	$(x + 1)(x - 1) =$	$[x^2 - 1]$
(e)	$(x - \frac{4}{5})(x + \frac{1}{4}) =$	$[x^2 - \frac{11x}{20} - \frac{1}{5}]$
(f)	$(x - 1)(x + 1) =$	$[x^2 - 1]$
(g)	$(x + 1)(x - \frac{3}{5}) =$	$[x^2 + \frac{2x}{5} - \frac{3}{5}]$
(h)	$(\frac{2x^2}{3} + 2x - \frac{6}{5})^2$	$[\frac{4x^4}{9} + \frac{8x^3}{3} + \frac{12x^2}{5} - \frac{24x}{5} + \frac{36}{25}]$
(i)	$(-x + 3)(4x - 5) =$	$[-4x^2 + 17x - 15]$
(j)	$(2x + 1)^3$	$[8x^3 + 12x^2 + 6x + 1]$
(k)	$(4x^2 + 5x - 3)^2$	$[16x^4 + 40x^3 + x^2 - 30x + 9]$
(l)	$(-\frac{x}{2} + \frac{1}{3})(-\frac{x}{2} - \frac{1}{3}) =$	$[\frac{x^2}{4} - \frac{1}{9}]$
(m)	$(-3x^2 - 7x - 7)(x + 1) =$	$[-3x^3 - 10x^2 - 14x - 7]$
(n)	$(6x^2 + 6x + 4)^2$	$[36x^4 + 72x^3 + 84x^2 + 48x + 16]$
(o)	$(x - 2)(x - 4) =$	$[x^2 - 6x + 8]$
(p)	$(-8x + 7)(2x - 3) =$	$[-16x^2 + 38x - 21]$
(q)	$(\frac{2x}{3} + \frac{1}{2})^4$	$[\frac{16x^4}{81} + \frac{16x^3}{27} + \frac{2x^2}{3} + \frac{x}{3} + \frac{1}{16}]$
(r)	$(\frac{x}{2} - \frac{1}{4})(\frac{x}{2} + \frac{1}{4}) =$	$[\frac{x^2}{4} - \frac{1}{16}]$
(s)	$(2x + 3)(2x - 3) =$	$[4x^2 - 9]$
(t)	$(4x + 4)^3$	$[64x^3 + 192x^2 + 192x + 64]$

$$(u) \left(-\frac{x^2}{3} - \frac{4x}{5} + \frac{4}{5}\right)^2$$

$$(v) \left(3x^2 + \frac{5x}{4} - \frac{1}{3}\right)^2$$

$$(w) \left(-\frac{3x}{4} - 1\right)^3$$

$$(x) \left(-\frac{5x}{12} - \frac{1}{4}\right) \left(\frac{5x^2}{7} + \frac{7x}{9} + \frac{7}{8}\right) =$$

$$(y) (3x^2 + 6x + 2)^2$$

$$(z) \left(\frac{x}{3} + \frac{1}{5}\right)^2$$

$$\left[\frac{x^4}{9} + \frac{8x^3}{15} + \frac{8x^2}{75} - \frac{32x}{25} + \frac{16}{25}\right]$$

$$\left[9x^4 + \frac{15x^3}{2} - \frac{7x^2}{16} - \frac{5x}{6} + \frac{1}{9}\right]$$

$$\left[-\frac{27x^3}{64} - \frac{27x^2}{16} - \frac{9x}{4} - 1\right]$$

$$\left[-\frac{25x^3}{84} - \frac{95x^2}{189} - \frac{161x}{288} - \frac{7}{32}\right]$$

$$[9x^4 + 36x^3 + 48x^2 + 24x + 4]$$

$$\left[\frac{x^2}{9} + \frac{2x}{15} + \frac{1}{25}\right]$$