

## 1. Ergänze auf ein vollständiges Quadrat!

a)  $x^2 + 10x + \underline{\hspace{2cm}} = (x + \underline{\hspace{2cm}})^2$

b)  $n^2 + 14n + \underline{\hspace{2cm}} = (n + \underline{\hspace{2cm}})^2$

c)  $y^2 - 8y + \underline{\hspace{2cm}} = (y - \underline{\hspace{2cm}})^2$

d)  $k^2 - 12k + \underline{\hspace{2cm}} = (k - \underline{\hspace{2cm}})^2$

e)  $a^2 + 6ab + \underline{\hspace{2cm}} = (a + \underline{\hspace{2cm}})^2$

f)  $u^2 - 20uv + \underline{\hspace{2cm}} = (u - \underline{\hspace{2cm}})^2$

g)  $x^2 + 3x + \underline{\hspace{2cm}} = (x + \underline{\hspace{2cm}})^2$

h)  $z^2 - z + \underline{\hspace{2cm}} = (z - \underline{\hspace{2cm}})^2$

2. a)  $(5x - 2y)^2 \cdot (5 - 3x) - (2x + 3y)^2 =$       b)  $(4x - 3y) \cdot 2 - 2x^2 \cdot (3 - 2y) =$   
 c)  $(15x - 3x^2 + 5 + 3x^2 - x + 2) : 7 =$       d)  $(a - 2b)^2 - (a - 2b) \cdot (a + 2b) =$   
 e)  $(p + q)2 + (p - q)2 =$       f)  $(3p + 2q)^2 - (2p - 3q)^2 =$   
 g)  $(a + 3b)^2 + (3a + b)(3a - b) =$       h)  $(5x + z)(5x - z) - (2x - 5z)^2 =$

Nur für besonders interessierte SchülerInnen – nicht Stoff der Schularbeit:

## 3. Verwende zum Lösen der Aufgaben das Pascal'sche Dreieck!

a)  $(2a + b)^3 = \underline{\hspace{10cm}}$

b)  $(a - 3b)^3 = \underline{\hspace{10cm}}$

c)  $(5 - y)^3 = \underline{\hspace{10cm}}$

d)  $(x + 2)^4 = \underline{\hspace{10cm}}$

e)  $(3x - 2)^4 = \underline{\hspace{10cm}}$

f)  $(2m + 1)^5 = \underline{\hspace{10cm}}$

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|--|---|--|
| 1. a) $x^2 + 10x + 25 = (x + 5)^2$                           | b) $n^2 + 14n + 49 = (n + 7)^2$                             | c) $y^2 - 8y + 16 = (y - 4)^2$         |
| d) $k^2 - 12k + 36 = (k - 6)^2$                              | e) $a^2 + 6ab + 9b^2 = (a + 3b)^2$                          | f) $u^2 - 20uv + 100v^2 = (u - 10v)^2$ |
| g) $x^2 - 3x + \frac{9}{4} = \left(x + \frac{3}{2}\right)^2$ | h) $z^2 - z + \frac{1}{4} = \left(z - \frac{1}{2}\right)^2$ |  |
| 2. a) $-75x^3 + 60x^2y + 121x^2 - 12xy^2 - 112xy + 11y^2$    | b) $4x^2y - 6x^2 + 8x - 6y$                                 |  |
| c) $2x + 1$  | d) $8b^2 - 4ab$   | e) $2p^2 + 2q^2$                       |
| f) $5p^2 + 24pq - 5q^2$                                      | g) $10a^2 + 6ab + 8b^2$                                     | h) $21x^2 + 20xz - 26z^2$              |
| 3. a) $8a^3 + 12a^2b + 6ab^2 + b^3$                          | b) $a^3 - 9a^2b + 27ab^2 - 27b^3$                           | c) $-y^3 + 15y^2 - 75y + 125$          |
| d) $x^4 + 8x^3 + 24x^2 + 32x + 16$                           | e) $81x^4 - 216x^3 + 216x^2 - 96x + 16$                     |  |
| f) $32m^5 + 80m^4 + 80m^3 + 40m^2 + 10m + 1$                 |   |  |