$(A + B)^2$ DRUHÁ MOCNINA DVOJČLENU   (M-08-19)

- druhou mocninu dvojčlenu určujeme dle vzorců:

$$(A + B)^2 = (-A - B)^2 = A^2 + 2 \cdot A \cdot B + B^2$$

$$(A - B)^2 = (-A + B)^2 = A^2 - 2 \cdot A \cdot B + B^2$$

Určete druhou mocninu dvojčlenů.

a) $(3a + 8)^2 = 9a^2 + 2 \cdot 3a \cdot 8 + 64 = \mathbf{9a^2 + 48a + 64}$

b) $(5b - c)^2 = 25b^2 - 2 \cdot 5b \cdot c + c^2 = \mathbf{25b^2 - 10bc + c^2}$

c) $(-6m + 2)^2 = 36m^2 - 2 \cdot 6m \cdot 2 + 4 = \mathbf{36m^2 - 24m + 4}$

d) $(-7x - 8y)^2 = 49x^2 + 2 \cdot 7x \cdot 8y + 64y^2 = \mathbf{49x^2 + 112xy + 64y^2}$

e) $(9ab - 10c)^2 = 81a^2b^2 - 2 \cdot 9ab \cdot 10c + 100c^2 = \mathbf{81a^2b^2 - 180abc + 100c^2}$

f) $(-12xy - 3z)^2 = 144x^2y^2 + 2 \cdot 12xy \cdot 3z + 9z^2 = \mathbf{144x^2y^2 + 72xyz + 9z^2}$

g) $-(11a + b)^2 = -(121a^2 + 2 \cdot 11a \cdot b + b^2) = -(121a^2 + 22ab + b^2) =$

   $= \mathbf{-121a^2 - 22ab - b^2}$

h) $4(-5m + 8n)^2 = 4(25m^2 - 2 \cdot 5m \cdot 8n + 64n^2) = 4(25m^2 - 80mn + 64n^2) =$

   $= \mathbf{100m^2 - 320mn + 256n^2}$

i) $(2p - 5r)^2 + (7p + 6r)^2 = 4p^2 - 20pr + 25r^2 + 49p^2 + 80pr + 36r^2 = \mathbf{53p^2 + 60pr + 66r^2}$

j) $-(-7t + s)^2 + (t - 4s)^2 = -(49t^2 - 14ts + s^2) + t^2 - 8ts + 16s^2 =$

$= -49t^2 + 14ts - s^2 + t^2 - 8ts + 16s^2 = \mathbf{-48t^2 + 6ts + 15s^2}$

k) $(9x - 3y)^2 - (2x + 8y)^2 = 81x^2 - 54xy + 9y^2 - (4x^2 + 24xy + 64y^2) =$

$= 81x^2 - 54xy + 9y^2 - 4x^2 - 24xy - 64y^2 = \mathbf{77x^2 - 78xy - 55y^2}$

l) $(15a - 12b)^2 - (12b + 15a)^2 = 225a^2 - 360ab + 144b^2 - (144b^2 + 360ab + 225a^2) =$

$= 225a^2 - 360ab + 144b^2 - 144b^2 - 360ab - 225a^2 = \mathbf{-720ab}$

m) $(-17v - 14z)^2 + (14z - 17v)^2 = 289v^2 + 578vz + 196z^2 + 196z^2 - 578vz + 289v^2 =$

$= \mathbf{578v^2 + 392z^2}$