

1. Vypočítejte a určete, kdy má výraz smysl.

$$(4x - 2) : 2 = \underline{\hspace{2cm}}$$

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

$$(9x - 6) : 3 = \underline{\hspace{2cm}}$$

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

$$(15x - 10y) : 5 = \underline{\hspace{2cm}}$$

$$(2x^2y + y^2) : y = \underline{\hspace{2cm}}$$

$$(8a - 2ab) : 2 = \underline{\hspace{2cm}}$$

$$(10d^3 - 20d) : d = \underline{\hspace{2cm}}$$

$$(8c^2 - 12c) : 4 = \underline{\hspace{2cm}}$$

$$(qr - r) : r = \underline{\hspace{2cm}}$$

2. Vydělte a určete, kdy má výraz smysl.

$$(12a^3 - 6a^2 + 3a) : 3a = \underline{\hspace{2cm}}$$

$$(4a^4 - 8a^3 + 6a^2) : 2a^2 = \underline{\hspace{2cm}}$$

$$(x^4y^2 - 2xy^3 - 3y^2) : y = \underline{\hspace{2cm}}$$

$$(x^5 - 3x^3 - x^2y) : x = \underline{\hspace{2cm}}$$

$$(2u^3v - u^2v^2 + 4u^3v^3) : uv = \underline{\hspace{2cm}}$$

$$(4uv^2 - 12uv^3 - 36u^3v) : 4uv = \underline{\hspace{2cm}}$$

3. Vhodným vytknutím rozložte na součin.

$$2ab + 2b = \underline{\hspace{2cm}}$$

$$3x + 3y = \underline{\hspace{2cm}}$$

$$5r + 10s = \underline{\hspace{2cm}}$$

$$4u - 4 = \underline{\hspace{2cm}}$$

$$10r^2s + 2rs = \underline{\hspace{2cm}}$$

$$a^5 + a^2 = \underline{\hspace{2cm}}$$

$$x^2y^3 + x^2y^2 = \underline{\hspace{2cm}}$$

$$3pq - p^2q = \underline{\hspace{2cm}}$$

$$2a^3y + 4a^2 = \underline{\hspace{2cm}}$$

$$9p^2 - 18q = \underline{\hspace{2cm}}$$

$$7ax + 7ay = \underline{\hspace{2cm}}$$

$$2a + ab = \underline{\hspace{2cm}}$$

4. Vhodným vytknutím rozložte na součin.

$$3abm - 6amn = \underline{\hspace{2cm}}$$

$$2a + 2b - 2c = \underline{\hspace{2cm}}$$

$$8bxz + 4byz = \underline{\hspace{2cm}}$$

$$5ax + 5bx - 5cx = \underline{\hspace{2cm}}$$

$$u^3 + u^2 = \underline{\hspace{2cm}}$$

$$3mn^2 - 6mn + 3m = \underline{\hspace{2cm}}$$

$$a^5 - a^2 = \underline{\hspace{2cm}}$$

$$5z^3 - 10z^2 + 15z = \underline{\hspace{2cm}}$$

$$36s^4t^2 - 48s^3t^3 = \underline{\hspace{2cm}}$$

$$r^2s + rs^2 = \underline{\hspace{2cm}}$$

$$15x - 60y + 30z = \underline{\hspace{2cm}}$$

$$4ab + 2bc - 6bd = \underline{\hspace{2cm}}$$

5. Rozložte na součin výrazy: (Vytkněte dvojčlen.)

$$a \cdot (x + y) + b \cdot (x + y) = \underline{\hspace{2cm}}$$

$$2 \cdot (u - 1) + v \cdot (u - 1) = \underline{\hspace{2cm}}$$

$$r \cdot (a + 3) + s \cdot (a + 3) = \underline{\hspace{2cm}}$$

$$p \cdot (r + 2s) - q \cdot (r + 2s) = \underline{\hspace{2cm}}$$

$$x \cdot (m - n) + 5 \cdot (m - n) = \underline{\hspace{2cm}}$$

$$x \cdot (3y + 7) - (3y + 7) = \underline{\hspace{2cm}}$$

6. Rozložte v součin dvou činitelů.

$$(4-p) - 2q \cdot (4-p) =$$

$$4 \cdot (x-y) + 7r \cdot (x-y) =$$

$$3d \cdot (c+ab) - 8 \cdot (c+ab) =$$

$$q \cdot (p-4) - r \cdot (p-4) =$$

$$x \cdot (a-1) + 2 \cdot (a-1) =$$

$$y \cdot (2-x) - (2-x) =$$

$$3r \cdot (5-r) + t \cdot (5-r) =$$

$$a \cdot (c-d) - b \cdot (c-d) =$$

$$3a \cdot (x^2 - 3y) - 8b \cdot (x^2 - 3y) =$$

$$a^2 \cdot (2a-3) + (2a-3) =$$

7. Z jednoho dvoučlenu vytkněte -1, potom rozložte v součin dvou činitelů.

$$9 \cdot (1-x^2) + 2 \cdot (x^2-1) =$$

$$2u \cdot (v-z) + 11 \cdot (z-v) =$$

$$r^2 \cdot (2a-5b) - 3s \cdot (5b-2a) =$$

$$q \cdot (p-8) - 17 \cdot (8-p) =$$

$$t \cdot (v+2) - u \cdot (-v-2) =$$

$$a \cdot (x+y) + (-x-y) =$$

$$3 \cdot (h^2 + 2q) - 4k \cdot (-h^2 - 2q) =$$

8. Rozložte v součin dvou činitelů. Využijte vzorce $a^2 - b^2 = (a-b) \cdot (a+b)$.

$$x^2 - y^2 =$$

$$b^2 - 1 =$$

$$25a^2 - b^2 =$$

$$4 - a^2 =$$

$$9m^2 - 64n^2 =$$

$$1 - x^2 =$$

$$z^2 - 9 =$$

$$p^2 - 49 =$$

$$100 - v^2 =$$

$$c^2 d^2 - 16 =$$

$$1 - 36u^2 =$$

$$s^2 - u^2 v^2 =$$

9. Upravte užitím vzorce $(a \pm b)^2 = a^2 \pm 2ab + b^2$.

$$x^2 + 2xy + y^2 =$$

$$z^2 - 6z + 9 =$$

$$c^2 + 2cd + d^2 =$$

$$c^2 - 2cd + d^2 =$$

$$x^2 + 2x + 1 =$$

$$4p^2 - 4pq + q^2 =$$

$$a^2 + 10a + 25 =$$

$$16s^2 - 8s + 1 =$$

$$p^2 + 2pq + q^2 =$$

$$p^2 - 14p + 49 =$$

$$r^2 + 2rs + s^2 =$$

$$r^2 - 20r + 100 =$$

$$u^2 + 2uv + v^2 =$$

$$y^2 - 2y + 1 =$$

$$z^2 + 2z + 1 =$$

$$4z^2 - 4z + 1 =$$