

TBM 1E, Algebra

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NIE zwei OP/VZ
miteinander

①

a) -2

b) $x - y + 2z$

c) 0

②

$-w^2$ x^3

$-y^4$ z^{77}

③

$$x^2y^4 + 6xy^2z + 9z^2$$

$$a^2b^2 + 8abc^3 + 16c^6$$

④

$$(a-5)^2$$

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

$$5pq(p+q)(p-q)$$

$$8a^2b(x+y)^2$$

$$(4r + \frac{1}{3}s)(4r - \frac{1}{3}s)$$

$$(a^4 + b)^2$$

$$(x-3)(x-7)$$

$$(3a-5b)^2$$

5

$$\frac{6x-12}{2x-4} = \frac{3(x-4)}{2(x-2)}$$

$$a) \frac{6x-12}{2x-4} = \frac{6(x-2)}{2(x-2)} = \frac{6}{2} = \underline{\underline{3}}$$

$$b) \frac{6a^2+6a-36}{3a^2-27} = \frac{6(a^2-a-6)}{3(a^2-9)}$$
$$= \frac{6(a+2)(a-3)}{3(a+3)(a-3)} = \underline{\underline{\frac{2(a+2)}{a+3}}}$$

$$c) \frac{8x^2+48x+40}{2x^2-50} = \frac{8(x^2+6x+5)}{2(x^2-25)}$$
$$= \frac{8(x+1)(x+5)}{2(x+5)(x-5)} = \underline{\underline{\frac{4(x+1)}{x-5}}}$$

$$d) \frac{16x^2+16x+4}{4x+2} = \frac{4(4x^2+4x+1)}{2(2x+1)}$$
$$= \frac{4(2x+1)^2}{2(2x+1)} = \underline{\underline{2(2x+1)}}$$

6

$$(x+5)(x-3) = 48$$

$$x^2+2x-15 = 48 \quad | -48$$

$$x^2+2x-63 = 0$$

$$(x-7)(x+9) = 0$$

$$x_1 = 7$$

$$x_2 = -9$$

$$(18x^3 + 3x^2 - 28x + 12) : (2x + 3) = 9x^2 - 12x + 4$$

$$\begin{array}{r} 18x^3 + 27x^2 \\ \hline \end{array}$$

$$- 24x^2 - 28x + 12$$

$$- 24x^2 - 36x$$

$$\begin{array}{r} 8x + 12 \\ \hline \end{array}$$

$$8x + 12$$

0

$$9x^2 - 12x + 4 = (3x - 2)^2$$

$$\Rightarrow (18x^3 + 3x^2 - 28x + 12) = (2x + 3)(3x - 2)^2$$
$$= \underline{\underline{(2x + 3)(3x - 2)^2}}$$