Lösungen BasM 2021 Serie A

1a) $24m^3 + m^2 - 5m^3 = 19m^3 + m^2$ ½ ½

1b) $3ab - 2ab + 2b = ab + 2b$ ½ ½

1c) $3ab^2 + 2ab - a^2 - 2ab - b^2 = 3ab^2 - a^2 - b^2$ ½ ½

1d) $\frac{8a}{9b^2} \cdot \frac{1}{2b} = \frac{4a}{9b^3}$ ½ ½

1e) $\frac{m \cdot m}{(m+1) \cdot m} - \frac{(m+1) \cdot (m+1)}{m \cdot (m+1)} = \frac{m^2 - m^2 - 2m - 1}{m \cdot (m+1)} = \frac{-2m - 1}{m \cdot (m+1)}$ ½ ½

1f) $3x\sqrt{1 + x^2}$ 1

1g) $2x^2y^4$ 1

2) $3mn(m - 3n)$ 1

3) $\frac{4 \cdot (4 - m^2)}{2 \cdot (2 - m)} = \frac{2 \cdot 2 \cdot (2 - m)(2 + m)}{2 \cdot (2 - m)} = 2(2 + m)$ ½ ½

4a) $-4 + 4 = 0$ ½ ½

4b) $4 - 3 \cdot (6 - 1) + 2 \cdot \frac{-2}{8} = 4 - 15 - \frac{1}{2} = -11 - \frac{1}{2} = -11{,}5$ ½ ½

4c) $\frac{3}{4} + \frac{4}{3} - 2 = \frac{9}{12} + \frac{16}{12} - \frac{24}{12} = \frac{1}{12}$ ½ ½

5a) $21x = 18 + 6x$
$15x = 18$ ½
$x = \frac{18}{15} = \frac{6}{5}$ ½

5b) $2-\frac{x}{2}=-x+1$

$4-x=-2x+2$ (½)

$2=-x$

$x=-2$ (½)

5c) $2x^2=50$

$x^2=25$ (½)

$x=\pm 5$ (½)

6) $3\%\ von\ 1200=\frac{1200}{100}\cdot 3=36$ (½)

$neue\ Miete$: $1236\ Franken$ (½)

7) $5000\frac{\text{m}}{\text{h}}$ $ergibt$ $\frac{1}{10}\text{h}$ für 500m (1)

$Also\ 6\ Minuten\ für\ 500m.$ (1)

8) $3\cdot\left(\frac{x}{2}+5\right)=48$ (1)

$\frac{x}{2}+5=16$

$\frac{x}{2}=11$

$x=22$ (1)