Lösung 1.5A Vorklassen 27.11.12

1a) $(2y-1)\cdot(y+2z) = 2y^2+4yz-y-2z-2y^2+2z$ ✓✗ ✓

$= 4yz-y$ ✗ 3P

1b) $\left(\frac{1}{2}x-2\right)^2-(2x-4)(2x+4)\cdot\frac{1}{2} = \frac{1}{4}x^2-2x+4-\frac{1}{2}(4x^2-16)$ ✓✗ ✓

$= \frac{1}{4}x^2-2x+4-2x^2+8 = -\frac{7}{4}x^2-2x+12$ ✓ ✗ 4P

2a) $\left(\frac{1}{2}x+3\right)^2 = \frac{1}{4}x^2+3x+9$ ✓✗

2b) $\left(2y^2+\frac{1}{2}z\right)^2 = 4y^4+2y^2z+\frac{1}{4}z^2$ ✓ ✗

2c) $(2t-s)^2 = 4t^2-4st+s^2$ ✓ ✗ ✗ 5P

3a) $\frac{8x-4}{2}-\frac{3x+9}{6} = 4x-2-\frac{1}{2}x-\frac{3}{2} = \frac{7}{2}x-\frac{7}{2}$ ✗ ✓ ✗

3b) $\frac{2x^2+4x+2}{1+x} = \frac{2(x+1)^2}{1+x} = 2(x+1) = 2x+2$ ✗ ✗ ✓

3c) $-\frac{3x^3-9x^2}{x^2-3x} = -\frac{3x^2(x-3)}{x(x-3)} = -3x$ ✗ ✓ 6P

4a) $T(-1) = 0-\frac{1}{2}(-1)^2-(-1) = \frac{1}{2}$ ✓✗

4b) $T\left(\frac{1}{2}\right) = \left(\frac{3}{2}\right)^3-\frac{1}{2}\cdot\frac{1}{4}-\frac{1}{2} = \frac{11}{4}$ ✓✗ 3P

5) $(2x-1)(3+\frac{1}{2}x)-(1-3x+x^2) = x+1$

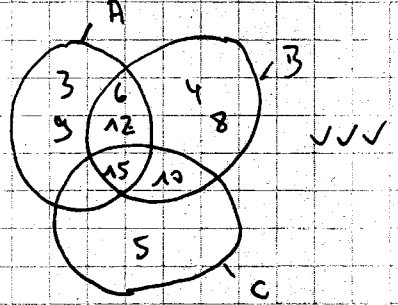
$6x+x^2-3-\frac{1}{2}x-1+3x-x^2 = x+1$ ✓ ✓

$8\frac{1}{2}x-4 = x+1$

$7\frac{1}{2}x = 5$

$x = \frac{2}{3}$ ✓ $\Rightarrow \mathbb{L} = \{\}$ ✓ 4P

6)



✓✓✓

a) $A \cap B \cap C = \{15\}$ ✓

b) $(A \cup B) \setminus C = \{3,4,6,8,9,12\}$ ✓✓ 6P

7. $A_{\square} = \frac{5x + 4x}{2} \cdot x = 4{,}5x^2$ ✓✓

$A_{\triangledown} = \frac{1}{2} \cdot 3x \cdot 2x = 3x^2$ ✓✓

7 P

$A_{\square} = x \cdot x = x^2$ ✓✓

$A_G = 2 \cdot 4{,}5x^2 + x^2 + 3x^2 = 13x^2$ ✓ ✗

—

$x = 1{,}5$: $A_G = 13 \cdot 1{,}5^2 = 29{,}25\,cm^2$ ✓

38 P