Disk. Math Prüf. SoSe 23

2.

c)

$$(25k + 23) \bmod (5k + 4)$$

$$= 25k + 23 - \left\lfloor \frac{25k+23}{5k+4} \right\rfloor \cdot (5k + 4)$$

$$= 25k + 23 - \left\lfloor \frac{25k+20+3}{5k+4} \right\rfloor \cdot (5k+4)$$

$$= 25k + 23 - \left\lfloor \frac{5(5k+4)+3}{5k+4} \right\rfloor \cdot (5k + 4)$$

$$= 25k + 23 - \left(\underbrace{\left\lfloor \frac{5(5k+4)}{5k+4} \right\rfloor}_{5} + \underbrace{\left\lfloor \frac{3}{5k+4} \right\rfloor}_{0} \right) \cdot (5k+4)$$

$$= 25k + 23 - 5 \cdot (5k+4)$$

$$= 25k - 25k + 23 - 20 = \underline{\underline{3}}$$