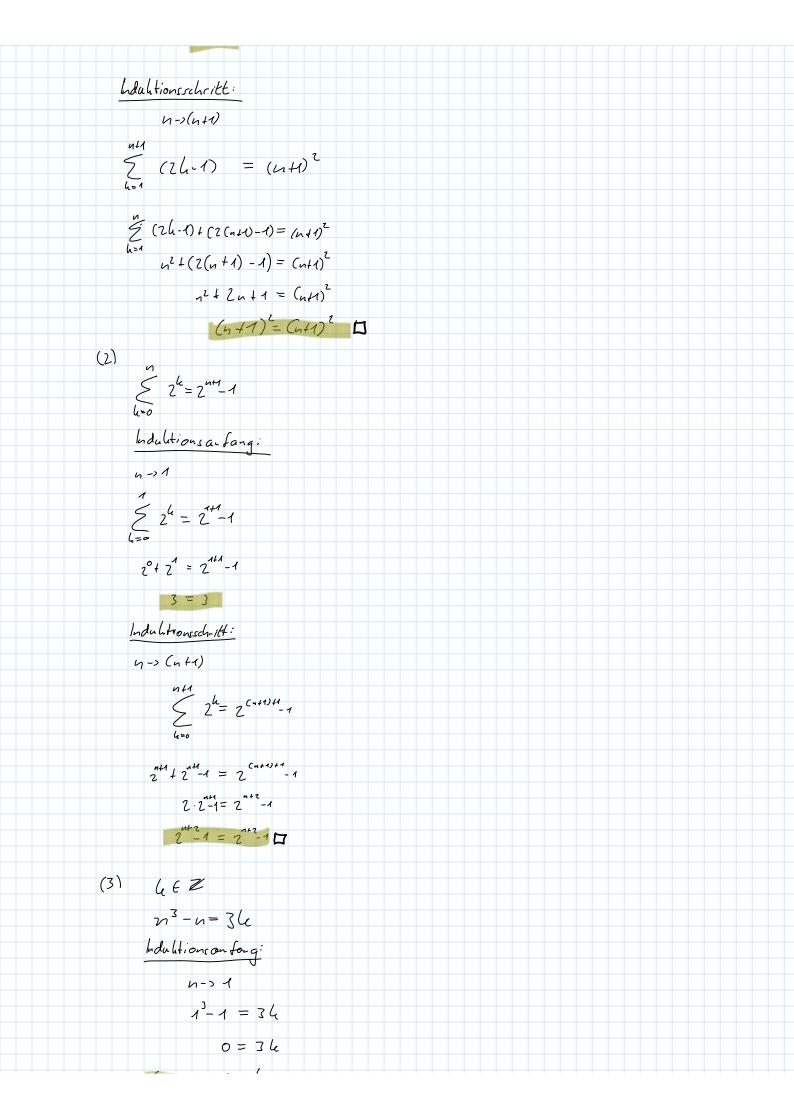
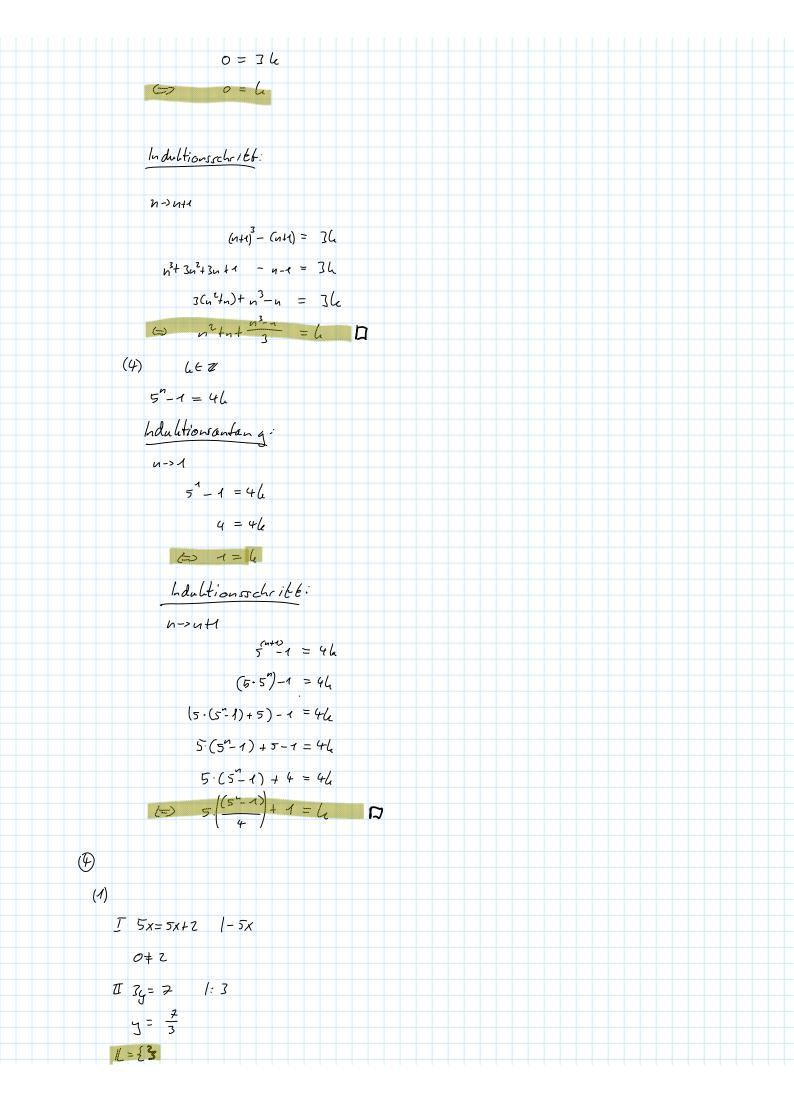
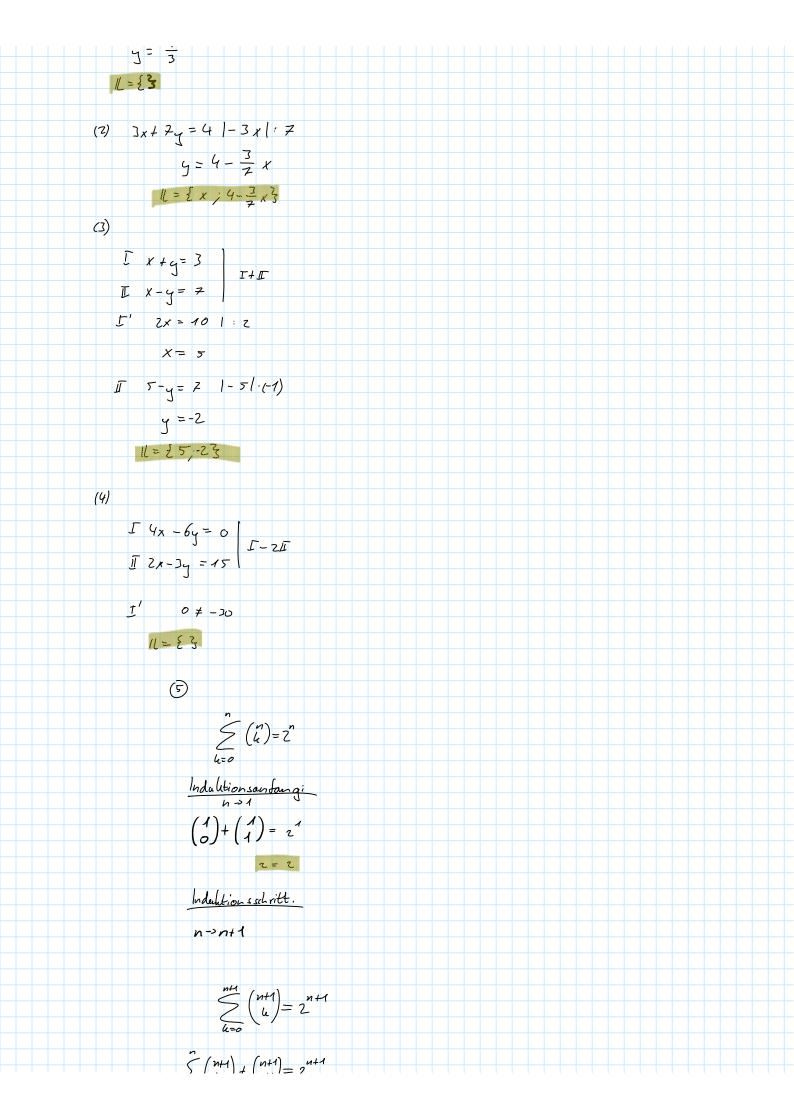
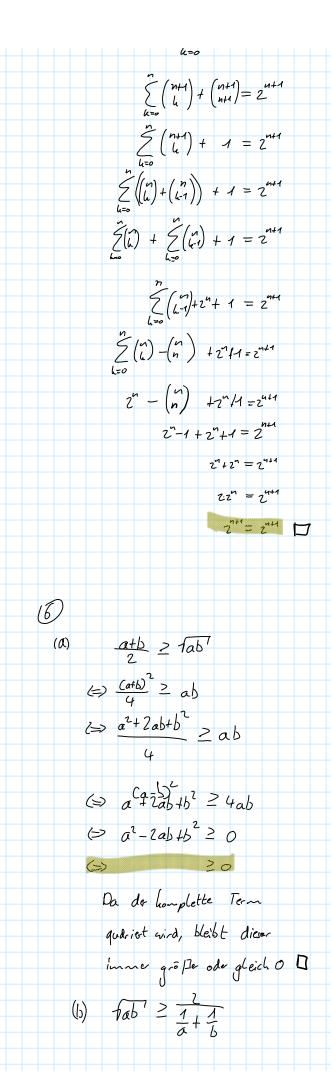


halahtionsschritt:









$$(=) \frac{2}{4ab} \le \frac{1}{a} + \frac{1}{b}$$

$$(=) \frac{4}{ab} \le \left(\frac{1}{a} + \frac{1}{b}\right)^{2}$$

$$(=) 0 \le \left(\frac{1}{a}\right)^{2} - 2\frac{1}{ab} - \left(\frac{1}{b}\right)^{2}$$

$$(=) 0 \le \left(\frac{1}{a} + \frac{1}{b}\right)^{2}$$

$$(=) 0 \le \left(\frac{1}{a} + \frac{1}{b}\right)^{2}$$

$$(=) \frac{a+b}{2} \le \frac{a^{2}+b^{2}}{2}$$

$$(=) 0 \le \frac{a^{2}+b^{2}}{2} = \frac{(a+b)^{2}}{4}$$

$$(=) 0 \le \frac{a^{2}+b^{2}}{2} = \frac{(a+b)^{2}}{4}$$

$$(=) 0 \leq \frac{a^2 + b^2}{2} - \frac{(a+b)^2}{4}$$

$$(=) 0 \leq \frac{a^2 + b^2}{2} - \frac{a^2 + 2ab + b^2}{4}$$

$$(=) 0 \leq \frac{a^2 + b^2}{2} - \frac{a^2 + 2ab + b^2}{4}$$

$$(=) 0 \leq \frac{a^2 + b^2}{2} - \frac{a^2 + 2ab + b^2}{4}$$

Da nor positie reelle Zohler eingwetzt werden, ist ab immer größe oder gleich O. M

(d) 
$$a + \frac{1}{a} \ge 2$$
  
 $=> \frac{a^2 + \frac{1}{a} \cdot a}{a} \ge 2 \cdot \frac{a}{a}$   
 $=> \frac{1+a^2}{a} \ge 2 \cdot \frac{a}{a}$   
 $=> \frac{1+a^2}{a} \ge 2 \cdot a$   
 $=> \frac{1+a^2}{a} \ge 2 \cdot a$ 

Da de Term quadriet wird, erhillt man

nor positive reelle Zahler auf de Linhen Seibe.