

# Sto Mathe Hausübung am 02.10.22

Bsp's: 1144a/h)

1144a) streng monoton steigend

$$a_n < a_{n+1}$$

$$(n \geq 1)$$

Ansatzform

$$a_n = n^2 + 4n - 12$$

$$n^2 + 4n - 12 < (n+1)^2 + 4 \cdot (n+1) - 12$$

$$n^2 + 4n - 12 < n^2 + 2n + 1 + 4n + 4 - 12$$

$$n^2 + 4n - 12 < n^2 + 6n - 7$$

$$-2n < 5 \quad | : (-2)$$

$$n > -\frac{5}{2}$$



1.144b)

$$a_n = \frac{3n-7}{8+5n}$$

Aussgangssituation

$$a_n < a_{n+1} \quad | -a_n$$

streng monoton  
steigend

$$a_{n+1} - a_n > 0$$

$$\frac{3(n+1)-7}{8+5(n+1)} - \frac{3n-7}{8+5n} > 0$$

$$\frac{(3n-4)}{13+5n} - \frac{3n-7}{8+5n} > 0$$

$$\frac{(3n-4) \cdot (8+5n) - (3n-7) \cdot (13+5n)}{(13+5n) \cdot (8+5n)} > 0 \quad | \cdot (13+5n) \cdot (8+5n)$$

$$24n + 15n^2 - 32 - 20n - (39n + 15n^2 - 91 - 35n)$$

$$4n + 15n^2 - 32 - 4n - 15n^2 + 91$$

$$-32 + 91 > 0$$

$$\underline{\underline{59 > 0}}$$