

S 25 Nr 13

a) $f(x) = x^2$

$$f(x) = 3 = x^2 \Rightarrow x_{1,2} = (\pm) \sqrt{3}$$

$$f'(x) = 2x \Rightarrow f'(\sqrt{3}) = 2 \cdot \sqrt{3} \text{ Steigung der Tangente}$$

$$\Rightarrow \tan(d) = 2 \cdot \sqrt{3} \Rightarrow d = \arctan(2 \cdot \sqrt{3}) \approx \underline{\underline{73,90^\circ}}$$

b.) $f(x) = x^2 = h = 1,5 \Rightarrow x_{1,2} = (\pm) \sqrt{\frac{3}{2}}$

$$\underline{f'(\frac{\sqrt{3}}{2})} = 2 \cdot \sqrt{\frac{3}{2}} \Rightarrow \tan(d) = 2 \cdot \sqrt{\frac{3}{2}} \Rightarrow d = \arctan(2\sqrt{\frac{3}{2}}) \approx \underline{\underline{67,79^\circ}}$$

$$f(x) = x^2 = h = 10 \Rightarrow x_{1,2} = (\pm) \sqrt{10}$$

$$f'(10) = 2 \cdot \sqrt{10} \Rightarrow \tan(d) = 2 \cdot \sqrt{10} \Rightarrow d = \arctan(2 \cdot \sqrt{10}) \approx \underline{\underline{81,02^\circ}}$$
