

15.05.2020

## Wurzelfunktionen

1.)

**a)**  $f(x) = \sqrt{(3x)}$    **b)**  $f(x) = \sqrt{(2x+1)}$    **c)**  $f(x) = \sqrt{(6x-3)}$

$$3x \geq 0 / :3$$

$$2x + 1 \geq 0 / -1$$

$$6x - 3 \geq 0 / +3$$

$$x \geq 0$$

$$2x \geq -1 / :2$$

$$6x \geq 3 / :6$$

$$D = [0 ; +\infty ]$$

$$x \geq -\frac{1}{2}$$

$$x \geq \frac{1}{2}$$

$$D = [R \geq / = -\frac{1}{2} ]$$

$$D = [R \geq / = \frac{1}{2} ]$$

**d)**  $f(x) = \sqrt{(x^2)}$    **e)**  $f(x) = 0,5 \sqrt{(7x-4)}$    **f)**  $f(x) = \sqrt{(x^2+3)}$

$$x^2 \geq 0 / \sqrt{}$$

$$7x - 4 \geq 0 / +4$$

$$x^2 + 3 \geq 0 / -3$$

$$x \geq 0$$

$$7x \geq 4 / :7$$

$$x^2 \geq -3 / \sqrt{}$$

$$D = [0 ; +\infty ]$$

$$x \geq 0,571$$

$$x \geq (f)$$

$$D = [ R \geq / = 0,571 ]$$

$$D = [R]$$

**g)**  $f(x) = \sqrt{(-4+x^2)}$    **h)**  $f(x) = \sqrt{(16-x^2)}$    **i)**  $f(x) = 3 \sqrt{(x+2-1)}$

$$-4 + x^2 \geq 0 / +4$$

$$16 - x^2 \geq 0 / -16$$

$$x + 2 - 1 \geq 0$$

$$x^2 \geq 4 / \sqrt{}$$

$$-x^2 \geq -16 / *(-1)$$

$$x + 1 \geq 0 / -1$$

$$x \geq 2$$

$$x^2 \geq 16 / \sqrt{}$$

$$x \geq -1$$

$$D = [R \geq / = 2]$$

$$x \geq 4$$

$$D = [R \geq / = -1]$$

$$D = [R \geq / = 4]$$

**j)**  $f(x) = \sqrt{(-x^2-1)}$    **k)**  $f(x) = \sqrt{(-x)}$    **l)**  $f(x) = 2 \sqrt{(-2x^2)}$

$$-x^2 - 1 \geq 0 / +1$$

$$-x \geq 0 / *(-1)$$

$$-2x^2 \geq 0 / :(-2)$$

$$-x^2 \geq -1 / *(-1)$$

$$x \geq -1$$

$$x^2 \geq 0 / \sqrt{}$$

$$x^2 \geq 1 / \sqrt{}$$

$$D = [R \geq / = -1]$$

$$x \geq 0$$

$$x \geq 1$$

$$D = [R \geq / = 0]$$

$$D = [R \geq / = 1]$$