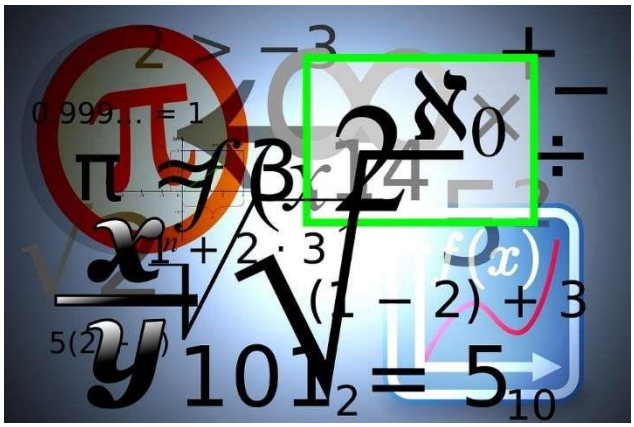
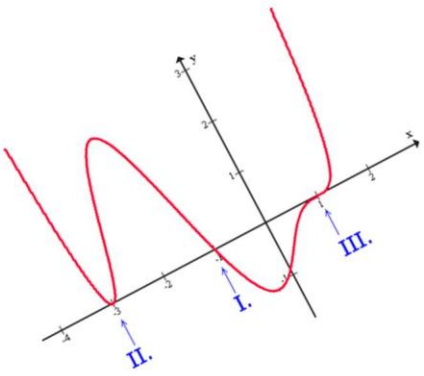
FOSBOS

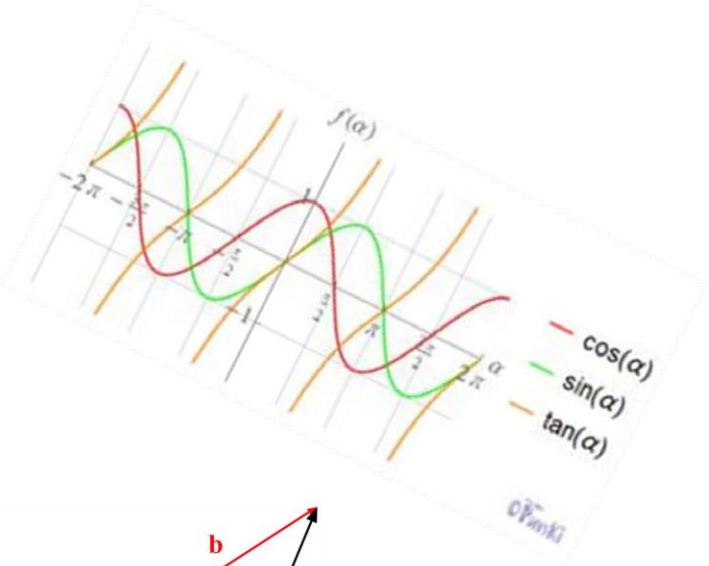
Kurzbeschreibung Wahlpflichtfach Mathematik Additum Nichttechnik

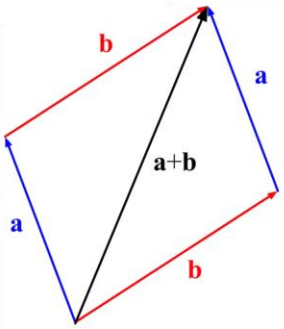
12. Klasse

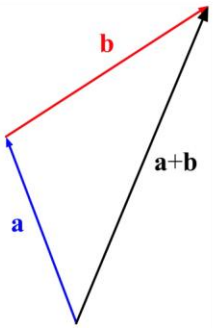


- Zweistündig
- Pro Halbjahr eine Kurzarbeit und mündliche Noten
- Geeignet für Schüler/innen, die in Mathe gut und interessiert sind



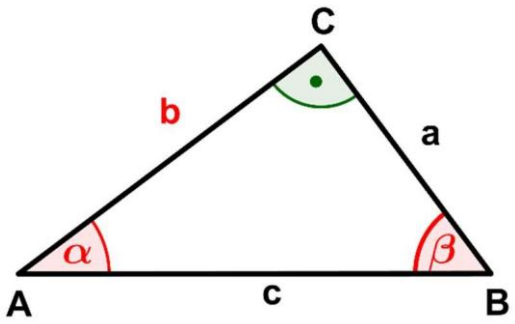






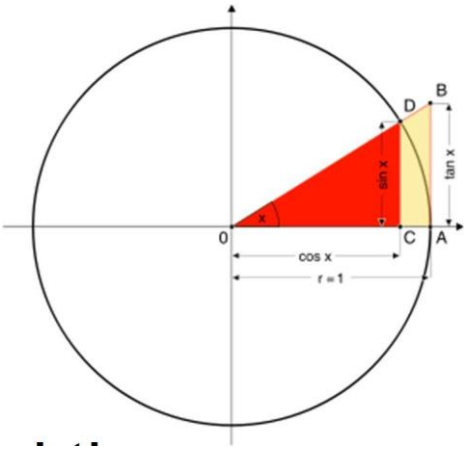
Themengebiete

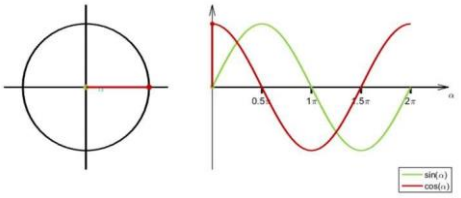
Trigonometrie



Sinus Kosinus Tangens

Winkelfunktionen am





Winkelfunktionen

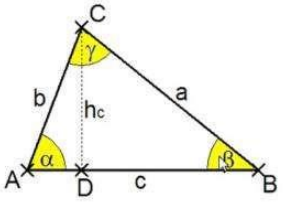
3.7 Sinus- und Cosinus-Satz

$\sin\alpha = \frac{h_c}{b}$ $\sin\beta = \frac{h_c}{a}$

$h_c = \sin\alpha \cdot b$ $h_c = \sin\beta \cdot a$

$\sin\alpha \cdot b = \sin\beta \cdot a$

$$\frac{\sin\alpha}{a} = \frac{\sin\beta}{b} = \frac{\sin\gamma}{c}$$



Gilt in allen Dreiecken!!!

$$\left(\begin{array}{ccc|c} 4 & -3 & 1 & 1 \\ -4 & 5 & -2 & 0 \\ 8 & -9 & 5 & 5 \end{array}\right)$$

1. Ziel

$$\left(\begin{array}{ccc|c} & & & \\ 0 & & & \\ 0 & & & \end{array}\right)$$

$$\left(\begin{array}{ccc|c} 4 & -3 & 1 & 1 \\ 0 & 2 & -1 & 1 \\ 0 & -3 & 3 & 3 \end{array}\right)$$

2. Ziel

$$\left(\begin{array}{ccc|c} & & & \\ 0 & & & \\ 0 & 0 & & \end{array}\right)$$

$$\left(\begin{array}{ccc|c} 4 & -3 & 1 & 1 \\ 0 & 2 & -1 & 1 \\ 0 & 0 & 3 & 9 \end{array}\right)$$

$$\begin{array}{lrcll} \text{III} & 3x_3 & = & 9 & |:3 \\ & x_3 & = & 3 & \\ \text{II} & 2x_2 - 1\cdot 3 & = & 1 & \\ & 2x_2 - 3 & = & 1 & |+3\ |:2 \\ & x_2 & = & 2 & \\ \text{I} & 4x_1 - 3\cdot 2 + 1\cdot 3 & = & 1 & \\ & 4x_1 - 3 & = & 1 & |+3\ |:4 \\ & x_1 & = & 1 & \end{array}$$

h)

$$\left(\begin{array}{ccc|c} 0 & 14 & -2 & 130 \\ 1 & 10 & -3 & 84 \\ 1 & 2 & -2 & 8 \end{array}\right)$$

$$\left(\begin{array}{ccc|c} 1 & 2 & -2 & 8 \\ 1 & 10 & -3 & 84 \\ 0 & 14 & -2 & 130 \end{array}\right) \quad (-1)$$

$$\left(\begin{array}{ccc|c} 1 & 2 & -2 & 8 \\ 0 & 8 & -1 & 76 \\ 0 & 14 & -2 & 130 \end{array}\right) \quad (-14)\ (8)$$

$$\left(\begin{array}{ccc|c} 1 & 2 & -2 & 8 \\ 0 & 8 & -1 & 76 \\ 0 & 0 & -2 & -24 \end{array}\right) \quad (-1/2)$$

$$\left(\begin{array}{ccc|c} 1 & 2 & -2 & 8 \\ 0 & 8 & -1 & 76 \\ 0 & 0 & 1 & 12 \end{array}\right)$$

$$\left(\begin{array}{ccc|c} 1 & 2 & -2 & 8 \\ 0 & 8 & 0 & 88 \\ 0 & 0 & 1 & 12 \end{array}\right) \quad (2)$$

$$\left(\begin{array}{ccc|c} 1 & 2 & 0 & 32 \\ 0 & 8 & 0 & 88 \\ 0 & 0 & 1 & 12 \end{array}\right) \quad (1/8)$$

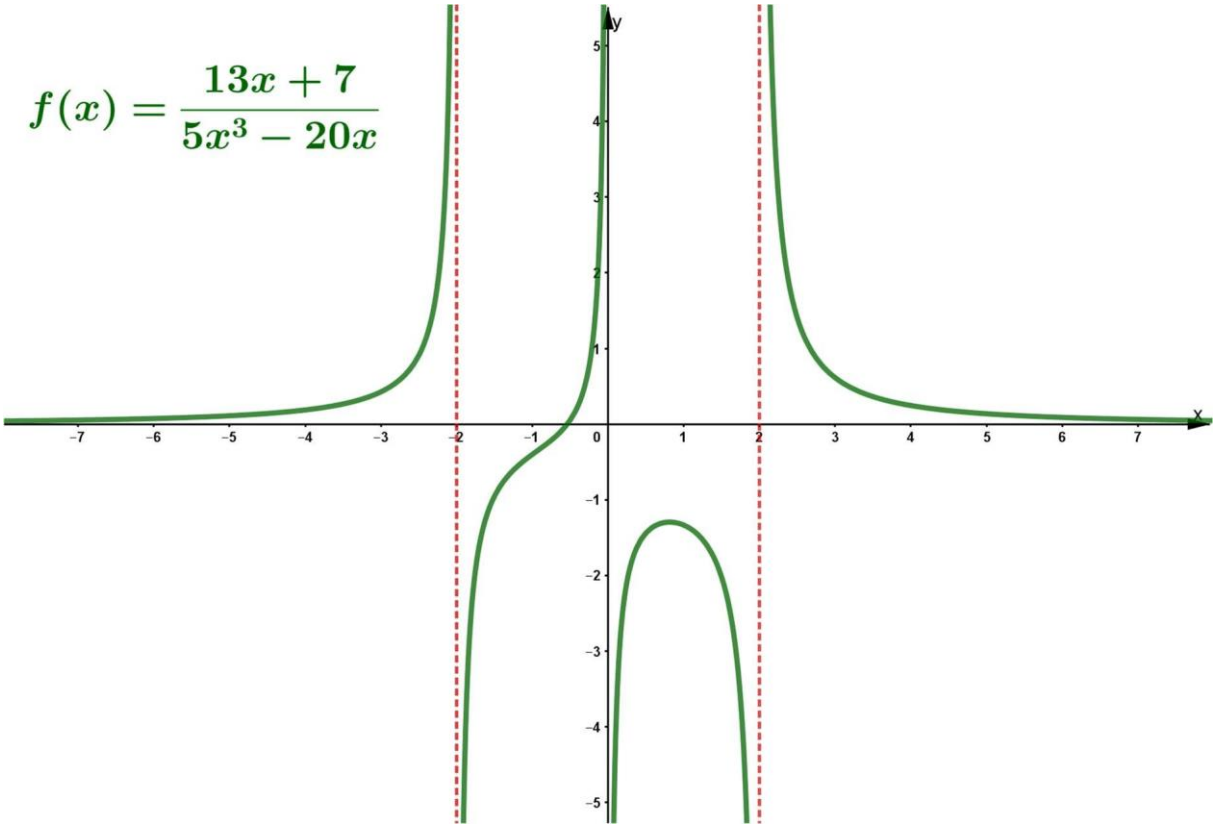
$$\left(\begin{array}{ccc|c} 1 & 2 & 0 & 32 \\ 0 & 1 & 0 & 11 \\ 0 & 0 & 1 & 12 \end{array}\right) \quad (-2)$$

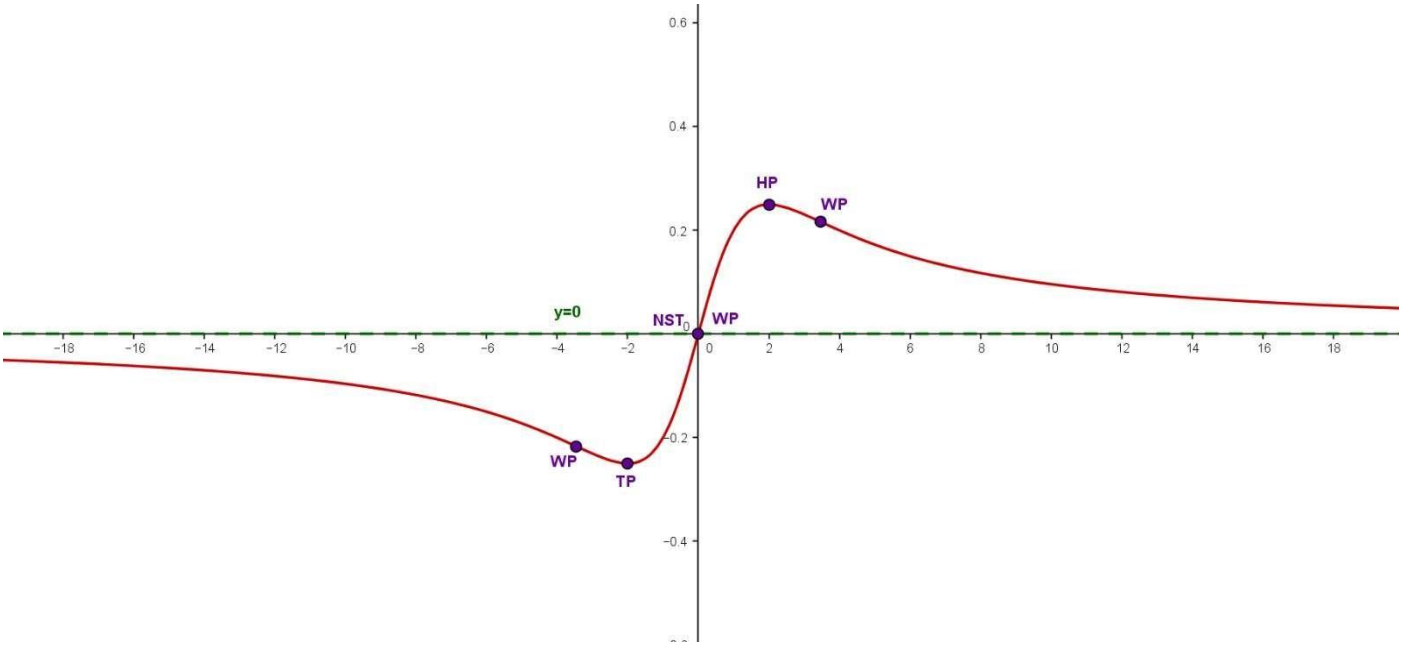
$$\left(\begin{array}{ccc|c} 1 & 0 & 0 & 10 \\ 0 & 1 & 0 & 11 \\ 0 & 0 & 1 & 12 \end{array}\right)$$

Themengebiete

Gebrochen rationale Funktionen

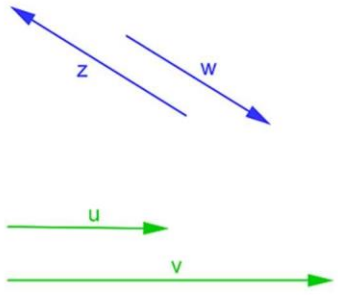
$$f(x) = \frac{13x + 7}{5x^3 - 20x}$$



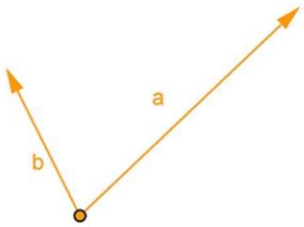


Themengebiete

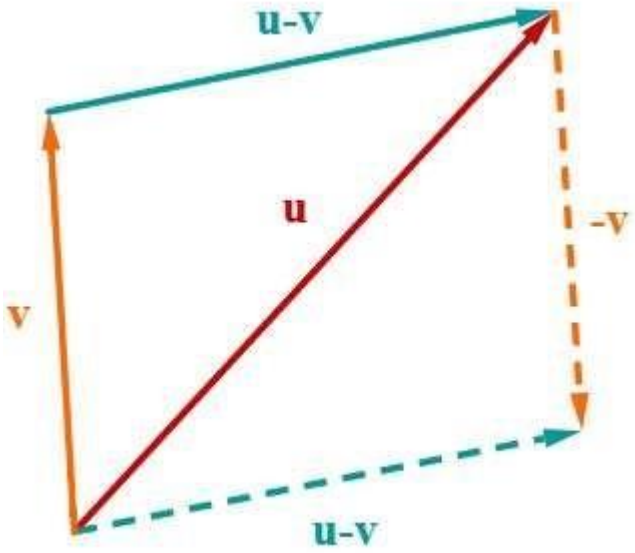
Vektorrechnung



Linear abhängige Vektoren



Linear unabhängige Vektoren



$$\begin{pmatrix} 2 \\ -1 \\ 1 \end{pmatrix} = r \cdot \begin{pmatrix} 1 \\ 7 \\ 2 \end{pmatrix} + s \cdot \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix} \quad ??????$$