

Polynomdivision

Aufgabe

Berechne:

$$(12x^3+84x^2+192x+144):(2x+6)=$$

$$(2x^3-12x^2+10x+24):(2x-8)=$$

$$(36x^3-108x^2-36x+108):(3x-9)=$$

$$(24x^3-24x^2-24x+24):(4x-4)=$$

$$(16x^3-32x^2-144x+288):(2x-6)=$$

$$(4x^3-20x^2-8x+96):(x+2)=$$

$$(8x^3+24x^2-128x-384):(2x+6)=$$

Lösung:

$$\begin{array}{r} (12x^3+84x^2+192x+144):(2x+6)=6x^2+24x+24 \\ \underline{-(12x^3+36x^2)} \\ 48x^2+192x \\ \underline{-(48x^2+144x)} \\ 48x+144 \\ \underline{-(48x+144)} \\ 0 \end{array}$$

$$\begin{array}{r} (2x^3-12x^2+10x+24):(2x-8)=x^2-2x-3 \\ \underline{-(2x^3-8x^2)} \\ -4x^2+10x \\ \underline{-(-4x^2+16x)} \\ -6x+24 \\ \underline{-(-6x+24)} \\ 0 \end{array}$$

$$\begin{array}{r} (36x^3-108x^2-36x+108):(3x-9)=12x^2-12 \\ \underline{-(36x^3-108x^2)} \\ -36x+108 \\ \underline{-(-36x+108)} \\ 0 \end{array}$$

$$\begin{array}{r} (24x^3-24x^2-24x+24):(4x-4)=6x^2-6 \\ \underline{-(24x^3-24x^2)} \\ -24x+24 \\ \underline{-(-24x+24)} \\ 0 \end{array}$$

$$\begin{array}{r} (16x^3-32x^2-144x+288):(2x-6)=8x^2+8x-48 \\ \underline{-(16x^3-48x^2)} \\ 16x^2-144x \\ \underline{-(16x^2-48x)} \\ -96x+288 \\ \underline{-(-96x+288)} \\ 0 \end{array}$$

$$\begin{array}{r} (4x^3-20x^2-8x+96):(x+2)=4x^2-28x+48 \\ \underline{-(4x^3+8x^2)} \\ -28x^2-8x \\ \underline{-(-28x^2-56x)} \\ 48x+96 \\ \underline{-(48x+96)} \\ 0 \end{array}$$

$$\begin{array}{r} (8x^3+24x^2-128x-384):(2x+6)=4x^2-64 \\ \underline{-(8x^3+24x^2)} \\ -128x-384 \\ \underline{-(-128x-384)} \\ 0 \end{array}$$