

Polynomdivision

Aufgabe

Berechne.

a) $(x^3 + 8x^2 + 20x + 16) : (x+2) =$

b) $(x^3 - 13x - 12) : (x-4) =$

c) $(x^3 + 4x^2 - 9x - 36) : (x-3) =$

d) $(x^3 + 2x^2 - 9x - 18) : (x+3) =$

e) $(x^3 - 1x^2 - 4x + 4) : (x-1) =$

f) $(x^3 - 3x^2 - 16x + 48) : (x-4) =$

g) $(x^3 + 2x^2 - 5x - 6) : (x+3) =$

h) $(x^3 + 8x^2 + 19x + 12) : (x+4) =$

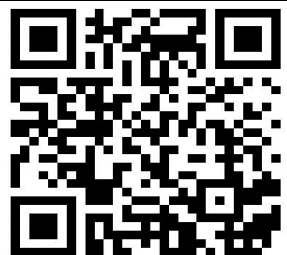
i) $(x^3 - 5x^2 + 2x + 8) : (x-4) =$

j) $(x^3 + 3x^2 - 9x - 27) : (x+3) =$

k) $(x^3 - 4x^2 - 9x + 36) : (x-4) =$

l) $(x^3 + 8x^2 + 21x + 18) : (x+3) =$

Ein Erklärvideo zum Thema findest du unter dem folgenden Link.



$$\begin{array}{r}
 \text{a) } (x^3 + 8x^2 + 20x + 16) : (x+2) = x^2 + 6x + 8 \\
 \underline{-(x^3 + 2x^2)} \\
 6x^2 + 20x \\
 \underline{-(6x^2 + 12x)} \\
 8x + 16 \\
 \underline{-(8x + 16)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{b) } (x^3 - 13x - 12) : (x-4) = x^2 + 4x + 3 \\
 \underline{-(x^3 - 4x^2)} \\
 4x^2 - 13x \\
 \underline{-(4x^2 - 16x)} \\
 3x - 12 \\
 \underline{-(3x - 12)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{c) } (x^3 + 4x^2 - 9x - 36) : (x-3) = x^2 + 7x + 12 \\
 \underline{-(x^3 - 3x^2)} \\
 7x^2 - 9x \\
 \underline{-(7x^2 - 21x)} \\
 12x - 36 \\
 \underline{-(12x - 36)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{d) } (x^3 + 2x^2 - 9x - 18) : (x+3) = x^2 - 1x - 6 \\
 \underline{-(x^3 + 3x^2)} \\
 -1x^2 - 9x \\
 \underline{-(-1x^2 - 3x)} \\
 -6x - 18 \\
 \underline{-(-6x - 18)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{e) } (x^3 - 1x^2 - 4x + 4) : (x-1) = x^2 - 4 \\
 \underline{-(x^3 - 1x^2)} \\
 -4x + 4 \\
 \underline{-(-4x + 4)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{f) } (x^3 - 3x^2 - 16x + 48) : (x-4) = x^2 + 1x - 12 \\
 \underline{-(x^3 - 4x^2)} \\
 1x^2 - 16x \\
 \underline{-(1x^2 - 4x)} \\
 -12x + 48 \\
 \underline{-(-12x + 48)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{g) } (x^3 + 2x^2 - 5x - 6) : (x+3) = x^2 - 1x - 2 \\
 \underline{-(x^3 + 3x^2)} \\
 -1x^2 - 5x \\
 \underline{-(-1x^2 - 3x)} \\
 -2x - 6 \\
 \underline{-(-2x - 6)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{h) } (x^3 + 8x^2 + 19x + 12) : (x+4) = x^2 + 4x + 3 \\
 \underline{-(x^3 + 4x^2)} \\
 4x^2 + 19x \\
 \underline{-(4x^2 + 16x)} \\
 3x + 12 \\
 \underline{-(3x + 12)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{i) } (x^3 - 5x^2 + 2x + 8) : (x-4) = x^2 - 1x - 2 \\
 \underline{-(x^3 - 4x^2)} \\
 -1x^2 + 2x \\
 \underline{-(-1x^2 + 4x)} \\
 -2x + 8 \\
 \underline{-(-2x + 8)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{j) } (x^3 + 3x^2 - 9x - 27) : (x+3) = x^2 - 9 \\
 \underline{-(x^3 + 3x^2)} \\
 -9x - 27 \\
 \underline{-(-9x - 27)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{k) } (x^3 - 4x^2 - 9x + 36) : (x-4) = x^2 - 9 \\
 \underline{-(x^3 - 4x^2)} \\
 -9x + 36 \\
 \underline{-(-9x + 36)} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \text{l) } (x^3 + 8x^2 + 21x + 18) : (x+3) = x^2 + 5x + 6 \\
 \underline{-(x^3 + 3x^2)} \\
 5x^2 + 21x \\
 \underline{-(5x^2 + 15x)} \\
 6x + 18 \\
 \underline{-(6x + 18)} \\
 0
 \end{array}$$