

MEMORANDUM: FAKTORISERING

GRAAD 10

$$\begin{aligned} 1. \quad & 18a^2 - 32b^2 \\ &= 2(9a^2 - 16b^2) \\ &= 2(3a + 4b)(3a - 4b) \end{aligned}$$

$$\begin{aligned} 2. \quad & 6x^2 - 9ax + 8cx - 12ac \\ &= 3x(2x - 3a) + 4c(2x - 3a) \\ &= (2x - 3a)(3x + 4c) \end{aligned}$$

$$\begin{aligned} 3. \quad & 5a^3 - 15a^2 - 20a \\ &= 5a(a^2 - 3a - 4) \\ &= 5a(a - 4)(a + 1) \end{aligned}$$

$$\begin{aligned} 4. \quad & 1 - x - x^2 + x^3 \\ &= 1 - x^2 - x + x^3 \\ &= 1 - x^2 - x(1 - x^2) \\ &= (1 - x^2)(1 - x) \end{aligned}$$

$$\begin{aligned} 5. \quad & 5 - \frac{45}{a^2} \\ &= 5\left(1 - \frac{9}{a^2}\right) \\ &= 5\left(1 + \frac{3}{a}\right)\left(1 - \frac{3}{a}\right) \end{aligned}$$

$$\begin{aligned} 6. \quad & -2x^2 - 26x - 24 \\ &= -2(x^2 + 13x + 12) \\ &= -2(x + 12)(x + 1) \end{aligned}$$

$$\begin{aligned}
7. \quad & 2x(x-1) - 6x^2(1-x) \\
& = 2x(x-1) + 6x^2(x-1) \\
& = (x-1)(2x + 6x^2) \\
& = 2x(1+3x)(x-1)
\end{aligned}$$

$$\begin{aligned}
8. \quad & 9a^2 + 12ab + 4b^2 - 25c^2 \\
& = (3a+2b)^2 - 25c^2 \\
& = (3a+2b+5c)(3a+2b-5c)
\end{aligned}$$

$$\begin{aligned}
9. \quad & 2(m+1)^2 - 7(m+1) + 6 \\
& \text{Stel } m+1 = k \\
& 2k^2 - 7k + 6 \\
& = (k-2)(2k-3) \\
& = (m+1-2)(2(m+1)-3) \\
& = (m-1)(2m-1)
\end{aligned}$$

$$\begin{aligned}
10. \quad & x(3x-2) - y(3y+2) \\
& = 3x^2 - 2x - 3y^2 - 2y \\
& = 3(x^2 - y^2) - 2(x+y) \\
& = 3(x+y)(x-y) - 2(x+y) \\
& = (x+y)(3x-3y-2)
\end{aligned}$$

$$\begin{aligned}
11. \quad & 3x - 81x^4 \\
& = 3x(1 - 27x^3) \\
& = 3x(1-3x)(1+3x+9x^2)
\end{aligned}$$

$$\begin{aligned}
12. \quad & 4(x-y)^2 - 25(a+b)^2 \\
& = [2(x-y) + 5(a+b)][2(x-y) - 5(a+b)] \\
& = (2x-2y+5a+5b)(2x-2y-5a-5b)
\end{aligned}$$