

Los de volgende kwadratische vergelijkingen op met de abc-formule. Schrijf de berekening op zoals in het voorbeeld.

<p>1) $3x^2 - 5x - 6 = 0$ $D = b^2 - 4ac$ $3 \quad -5 \quad -6$ $= 25 - (4 \cdot 3 \cdot -6)$ $= 25 + 72 = 97$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{5 \pm \sqrt{97}}{6} \Leftrightarrow \frac{5}{6} \pm \frac{1}{6} \sqrt{97}$</p> <p><u>$x = \frac{5}{6} + \frac{1}{6} \sqrt{97}$ V $x = \frac{5}{6} - \frac{1}{6} \sqrt{97}$</u></p>	<p>2) $15x^2 - 13x + 2 = 0$ $D = b^2 - 4ac$ $15 \quad -13 \quad 2$ $= 169 - (4 \cdot 15 \cdot 2)$ $= 169 - 120 = 49$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{13 \pm 7}{30} \Leftrightarrow \frac{20}{30} = \frac{2}{3}$ $\Leftrightarrow \frac{6}{30} = \frac{1}{5}$</p> <p><u>$x = \frac{2}{3}$ V $x = \frac{1}{5}$</u></p>
<p>3) $2x^2 - 13x + 15 = 0$ $D = b^2 - 4ac$ $2 \quad -13 \quad 15$ $= 169 - (4 \cdot 2 \cdot 15)$ $= 169 - 120 = 49$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{13 \pm 7}{4} \Leftrightarrow \frac{20}{4} = 5$ $\Leftrightarrow \frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$</p> <p><u>$x = 1\frac{1}{2}$ V $x = 5$</u></p>	<p>4) $1 = 5x - 5x^2$ $D = b^2 - 4ac$ $5x^2 - 5x + 1 = 0$ $= 25 - (4 \cdot 5 \cdot 1)$ $5 \quad -5 \quad 1$ $= 25 - 20 = 5$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{5 \pm \sqrt{5}}{10} \Leftrightarrow \frac{1}{2} \pm \frac{1}{10} \sqrt{5}$ $\Leftrightarrow \frac{1}{2} - \frac{1}{10} \sqrt{5}$</p> <p><u>$x = \frac{1}{2} + \frac{1}{10} \sqrt{5}$ V $x = \frac{1}{2} - \frac{1}{10} \sqrt{5}$</u></p>
<p>5) $8x - x^2 = 1$ $D = b^2 - 4ac$ $-x^2 + 8x - 1 = 0$ $= 64 - (4 \cdot -1 \cdot -1)$ $-1 \quad 8 \quad -1$ $= 64 - 4 = 60$ $\sqrt{D} = \sqrt{60} = \sqrt{4 \cdot 15} = 2\sqrt{15}$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{-8 \pm 2\sqrt{15}}{-2} \Leftrightarrow 4 + \sqrt{15}$ $\Leftrightarrow 4 - \sqrt{15}$</p> <p><u>$x = 4 + \sqrt{15}$ V $x = 4 - \sqrt{15}$</u></p>	<p>6) $8x^2 - 6x + 20 = 10$ $D = b^2 - 4ac$ $8x^2 - 6x + 20 - 10 = 0$ $= 36 - (4 \cdot 8 \cdot 10)$ $8x^2 - 6x + 10 = 0$ < 0 $8 \quad -6 \quad 10$</p> <p><u>geen oplossingen</u></p>
<p>7) $3 + 3x - 9x^2 = 0$ $D = b^2 - 4ac$ $-9x^2 + 3x + 3 = 0$ $= 1 - (4 \cdot -3 \cdot 1)$ $-3x^2 + x + 1 = 0$ $= 1 + 12 = 13$ $-3 \quad 1 \quad 1$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{-1 \pm \sqrt{13}}{-6} \Leftrightarrow \frac{1}{6} \pm \frac{1}{6} \sqrt{13}$ $\Leftrightarrow \frac{1}{6} - \frac{1}{6} \sqrt{13}$</p> <p><u>$x = \frac{1}{6} + \frac{1}{6} \sqrt{13}$ V $x = \frac{1}{6} - \frac{1}{6} \sqrt{13}$</u></p>	<p>8) $9x^2 - 30x + 25 = 0$ $D = b^2 - 4ac$ $9 \quad -30 \quad 25$ $= 900 - (4 \cdot 9 \cdot 25)$ $= 900 - (100 \cdot 9)$ $= 900 - 900 = 0$</p> <p>$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$ $= \frac{30 \pm 0}{18} \Leftrightarrow \frac{30}{18} = \frac{15}{9} = 1\frac{6}{9}$ $= 1\frac{2}{3}$</p> <p><u>$x = 1\frac{2}{3}$</u></p>

