

(%i1) solve(a\*x^3 + b\*x^2 + c\*x + d = 0, x);

(%o1) [

$$x = \left( \frac{\sqrt{27 a^2 d^2 + (4 b^3 - 18 a b c) d + 4 a c^3 - b^2 c^2}}{2 \cdot 3^{\frac{3}{2}} a^2} - \frac{27 a^2 d - 9 a b c + 2 b^3}{54 a^3} \right)^{\frac{1}{3}} - \frac{b}{3 a},$$
$$9 a^2 \left( \frac{\sqrt{27 a^2 d^2 + (4 b^3 - 18 a b c) d + 4 a c^3 - b^2 c^2}}{2 \cdot 3^{\frac{3}{2}} a^2} - \frac{27 a^2 d - 9 a b c + 2 b^3}{54 a^3} \right)^{\frac{1}{3}} - \frac{b}{3 a},$$
$$x = \left( \frac{\sqrt{3} i}{2} - \frac{1}{2} \right) \left( \frac{\sqrt{27 a^2 d^2 + (4 b^3 - 18 a b c) d + 4 a c^3 - b^2 c^2}}{2 \cdot 3^{\frac{3}{2}} a^2} - \frac{27 a^2 d - 9 a b c + 2 b^3}{54 a^3} \right)^{\frac{1}{3}} - \frac{b}{3 a},$$
$$\left( -\frac{\sqrt{3} i}{2} - \frac{1}{2} \right) (3 a c - b^2)$$
$$9 a^2 \left( \frac{\sqrt{27 a^2 d^2 + (4 b^3 - 18 a b c) d + 4 a c^3 - b^2 c^2}}{2 \cdot 3^{\frac{3}{2}} a^2} - \frac{27 a^2 d - 9 a b c + 2 b^3}{54 a^3} \right)^{\frac{1}{3}} - \frac{b}{3 a},$$
$$x = \left( -\frac{\sqrt{3} i}{2} - \frac{1}{2} \right) \left( \frac{\sqrt{27 a^2 d^2 + (4 b^3 - 18 a b c) d + 4 a c^3 - b^2 c^2}}{2 \cdot 3^{\frac{3}{2}} a^2} - \frac{27 a^2 d - 9 a b c + 2 b^3}{54 a^3} \right)^{\frac{1}{3}} - \frac{b}{3 a},$$
$$\left( \frac{\sqrt{3} i}{2} - \frac{1}{2} \right) (3 a c - b^2)$$
$$9 a^2 \left( \frac{\sqrt{27 a^2 d^2 + (4 b^3 - 18 a b c) d + 4 a c^3 - b^2 c^2}}{2 \cdot 3^{\frac{3}{2}} a^2} - \frac{27 a^2 d - 9 a b c + 2 b^3}{54 a^3} \right)^{\frac{1}{3}} - \frac{b}{3 a}$$

]

(%i2) solve(a\*x^4+b\*x^3+c\*x^2+d\*x+e=0,x);

<< Expression toolong to display! >>