

Facitliste

430:

> `solve(z^3=1);`

$$1, -\frac{1}{2} + \frac{1}{2}I\sqrt{3}, -\frac{1}{2} - \frac{1}{2}I\sqrt{3}$$

> `solve(z^3=I);`

$$\frac{\sqrt{3}}{2} + \frac{1}{2}I, \frac{1}{2}I - \frac{\sqrt{3}}{2}, -I$$

432:

> `solve(x^4+16=0);`

$$\sqrt{2} + \sqrt{2}I, -\sqrt{2} + \sqrt{2}I, -\sqrt{2} - \sqrt{2}I, \sqrt{2} - \sqrt{2}I$$

> `factor(x^4+16, 2^(1/2));`

$$(x^2 + 2x\sqrt{2} + 4)(x^2 - 2x\sqrt{2} + 4)$$

433:

> `s:=solve(z^8+1=0);`

$$s := \frac{\sqrt{2+\sqrt{2}}}{2} + \frac{1}{2}I\sqrt{2-\sqrt{2}}, \frac{\sqrt{2-\sqrt{2}}}{2} + \frac{1}{2}I\sqrt{2+\sqrt{2}}, -\frac{\sqrt{2-\sqrt{2}}}{2} + \frac{1}{2}I\sqrt{2+\sqrt{2}}, \\ -\frac{\sqrt{2+\sqrt{2}}}{2} + \frac{1}{2}I\sqrt{2-\sqrt{2}}, -\frac{\sqrt{2+\sqrt{2}}}{2} - \frac{1}{2}I\sqrt{2-\sqrt{2}}, -\frac{\sqrt{2-\sqrt{2}}}{2} - \frac{1}{2}I\sqrt{2+\sqrt{2}}, \\ \frac{\sqrt{2-\sqrt{2}}}{2} - \frac{1}{2}I\sqrt{2+\sqrt{2}}, \frac{\sqrt{2+\sqrt{2}}}{2} - \frac{1}{2}I\sqrt{2-\sqrt{2}}$$

> `factor(x^8+1, (2+2^(1/2))^(1/2));`

$$(x^2 - \sqrt{2+\sqrt{2}}x + 1)(x^2 + \sqrt{2+\sqrt{2}}x + 1)(x^2 - \sqrt{2+\sqrt{2}}x + \sqrt{2}x\sqrt{2+\sqrt{2}} + 1) \\ (x^2 + \sqrt{2+\sqrt{2}}x - \sqrt{2}x\sqrt{2+\sqrt{2}} + 1)$$

434:

> `s:=solve(x^6-1=0);`

$$s := -1, 1, -\frac{\sqrt{-2+2I\sqrt{3}}}{2}, \frac{\sqrt{-2+2I\sqrt{3}}}{2}, -\frac{\sqrt{-2-2I\sqrt{3}}}{2}, \frac{\sqrt{-2-2I\sqrt{3}}}{2}$$

> `map(evalc, [s]);`

$$\left[-1, 1, -\frac{1}{2} - \frac{1}{2}I\sqrt{3}, \frac{1}{2} + \frac{1}{2}I\sqrt{3}, -\frac{1}{2} + \frac{1}{2}I\sqrt{3}, \frac{1}{2} - \frac{1}{2}I\sqrt{3} \right]$$

> `factor(x^6-1);`

$$(x-1)(x+1)(x^2+x+1)(x^2-x+1)$$

436:

> `evalc(exp(I*Pi/2));`

$$I$$

> `evalc(3*exp(1+Pi*I));`

$$-3e$$

> `evalc((1-exp(I*Pi/2))/(1+exp(I*Pi/2))+exp(I*Pi/4)-exp(-I*Pi/4));`

$$(\sqrt{2} - 1)I$$

440:

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> combine(simplify(sin(3*x)*cos(5*x)));
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$$\frac{1}{2}\sin(8x) - \frac{1}{2}\sin(2x)$$

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>
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