

Facitliste III

424:

> `solve(z^2+2*z-2-4*I);`

$$1 + I, -3 - I$$

425:

> `solve(z^2-(5+5*I)*z+13*I);`

$$3 + 2I, 2 + 3I$$

426:

> `solve(I*z^2-(2+3*I)*z+1+5*I);`

$$2 - 3I, 1 + I$$

427:

> `solve((z+1)^2=3+4*I);`

$$1 + I, -3 - I$$

429:

> `solve(z^2-4*I*z-1+4*I);`

$$1, -1 + 4I$$

> `s:=solve(z^4-4*I*z^2-1+4*I);`

$$s := \sqrt{-1 + 4I}, -\sqrt{-1 + 4I}, 1, -1$$

> `evalc(s[1]);`

$$\frac{\sqrt{-2 + 2\sqrt{17}}}{2} + \frac{1}{2}I\sqrt{2 + 2\sqrt{17}}$$

> `evalc(s[2]);`

$$-\frac{\sqrt{-2 + 2\sqrt{17}}}{2} - \frac{1}{2}I\sqrt{2 + 2\sqrt{17}}$$

446:

> `A:=sqrt(6)+sqrt(2)+I*(sqrt(6)-sqrt(2));`

$$A := \sqrt{6} + \sqrt{2} + (\sqrt{6} - \sqrt{2})I$$

> `B:=expand(A^2);`

$$B := 4\sqrt{6}\sqrt{2} + 8I$$

> `convert(B,polar);`

$$\text{polar}\left(16, \arctan\left(\frac{\sqrt{6}\sqrt{2}}{6}\right)\right)$$

> `simplify(arctan(sqrt(6)*sqrt(2)/6));`

$$\frac{\pi}{6}$$

> `s:=solve(z^2=8*(sqrt(3)+I));`

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

> `evalc(s[1]);evalc((s[2]));`

$$\begin{aligned} &\sqrt{6} + \sqrt{2} + (\sqrt{6} - \sqrt{2})I \\ &-\sqrt{6} - \sqrt{2} + (-\sqrt{6} + \sqrt{2})I \end{aligned}$$

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478:
> solve(z^4+2*z^2-8);
2 I, -2 I, sqrt(2), -sqrt(2)
> factor(z^4+2*z^2-8);
(z^2 + 4)(z^2 - 2)
>
```