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Title of the article

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Abstract: An abstract should accompany every article. It should be a brief summary of significant results of the paper. An abstract should give concise information about the content of the core idea of your paper. It should be informative and not only present the general scope of the paper but also indicate the main results and conclusions.
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MSC: XXXXX, YYYYY

Keywords: Keyword 1 • Keyword 2 • Keyword 3

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1. Introduction

Some introductory text. Some introductory text.

2. Sample section

Sample theorem with citation:

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Theorem 2.1 (Pythagoras [7]).
Let a, b, c denote the sides of a triangle. If the angle between a, b equals 90° then

$$|a|^2 + |b|^2 = |c|^2.$$

Moreover, regardless of the assumption on the angle, it holds that $|a| + |b| \geq |c|$.

See References for the bibliography style in CEJM. Below is a proposition with a proof.

Proposition 2.1.
The only possible real solutions of the quadratic equation $ax^2 + bx + c = 0$ are

$$x_1 = \frac{-b - \sqrt{\Delta}}{2a} \qquad \textit{and} \qquad x_2 = \frac{-b + \sqrt{\Delta}}{2a},$$

where $\Delta = b^2 - 4ac$.

Proof. Observe that

$$(x - x_1)\,(x - x_2) = -\frac{\Delta}{4\,a^2} + x^2 + \frac{b\,x}{a} + \frac{b^2}{4\,a^2} \tag{1}$$

Taking into account that $\Delta = b^2 - 4ac$, equation (1) leads to

$$(x - x_1)\,(x - x_2) = \frac{c}{a} + x^2 + \frac{b\,x}{a} \tag{2}$$

Finally, (2) shows that $a\,(x - x_1)\,(x - x_2)$ equals the original equation. A polynomial of degree two cannot have more than two roots, therefore x_1, x_2 are the only possible solutions of our equation. □

Corollary 2.1.
If $b^2 < 4ac$ then the quadratic equation $ax^2 + bx + c = 0$ has no real solutions.

2.1. Subsections and sample formulas

This is a subsection.

Typical aligned list of formulas with labels, displayed by using the `align`environment.

$$(b + a)\,(2\,b - 3\,a) = 2\,b^2 - a\,b - 3\,a^2 \tag{3}$$

$$123 + 321 = 444 \tag{4}$$

The same list without labels.

$$(b + a)\,(2\,b - 3\,a) = 2\,b^2 - a\,b - 3\,a^2$$

$$123 + 321 = 444$$

Now the same list with custom tags.

$$(b+a)\,(2\,b-3\,a)=2\,b^2-a\,b-3\,a^2 \tag{**}$$

$$123+321=444 \tag{‡}$$

Another example of aligned formulas

$$1+1=2 \qquad 1+2=3 \qquad 1+3=4$$

with some text inserted between,

$$10+1=11 \qquad 10+2=12 \qquad 10+3=13$$

$$100+1=101 \qquad 100+2=102 \qquad 100+3=103$$

by using the `\intertext`command.

2.1.1. Polynomials of degree three

This is a "subsubsection".

Below is a complicated formula, which must be divided into several lines using, for instance, the **`align*`** environment:

$$\begin{aligned}
x_1 &= \left(-\frac{\sqrt{3}\,i}{2}-\frac{1}{2}\right)\left(\frac{3^{-\frac{3}{2}}\,\sqrt{12\,a^4-12\,a^3+188\,a^2-432\,a+247}}{2}-\frac{2\,a^3+72\,a-81}{54}\right)^{\frac{1}{3}}\\
&+\frac{\left(\frac{\sqrt{3}\,i}{2}-\frac{1}{2}\right)\,\left(a^2-3\right)}{9\,\left(\frac{3^{-\frac{3}{2}}\,\sqrt{12\,a^4-12\,a^3+188\,a^2-432\,a+247}}{2}-\frac{2\,a^3+72\,a-81}{54}\right)^{\frac{1}{3}}}-\frac{a}{3},\\
x_2 &= \left(\frac{\sqrt{3}\,i}{2}-\frac{1}{2}\right)\left(\frac{3^{-\frac{3}{2}}\,\sqrt{12\,a^4-12\,a^3+188\,a^2-432\,a+247}}{2}-\frac{2\,a^3+72\,a-81}{54}\right)^{\frac{1}{3}}\\
&+\frac{\left(-\frac{\sqrt{3}\,i}{2}-\frac{1}{2}\right)\,\left(a^2-3\right)}{9\,\left(\frac{3^{-\frac{3}{2}}\,\sqrt{12\,a^4-12\,a^3+188\,a^2-432\,a+247}}{2}-\frac{2\,a^3+72\,a-81}{54}\right)^{\frac{1}{3}}}-\frac{a}{3},\\
x_3 &= \left(\frac{3^{-\frac{3}{2}}\,\sqrt{12\,a^4-12\,a^3+188\,a^2-432\,a+247}}{2}-\frac{2\,a^3+72\,a-81}{54}\right)^{\frac{1}{3}}\\
&+\frac{a^2-3}{9\,\left(\frac{3^{-\frac{3}{2}}\,\sqrt{12\,a^4-12\,a^3+188\,a^2-432\,a+247}}{2}-\frac{2\,a^3+72\,a-81}{54}\right)^{\frac{1}{3}}}-\frac{a}{3}
\end{aligned}$$

Theorem 2.2.
The numbers x_1, x_2, x_3 defined above are the only complex solutions of the equation

$$x^3+a\,x^2+x+3\,(a-1)=0.$$

Proof. Easy calculations, using Maxima or some other free computer algebra system. □

Table 1. **Some caption text.**

Some title				
row 1, column 1	row 1, column 2			
row 2, column 1	row 2, column 2			
row 3, column 1	row 3, column 2			
Another title	Value 1	Value 2	Value 3	
row 1	130	30	30	
row 2	1025	1	15	
row 3	100	1	10	
row 4	2925	1	4	
row 5	2950	1	2	

Other polynomials

This is a paragraph with title.

One should admit that there is no general formula for the solutions of general polynomial equations and therefore sometimes we must use numerical methods.

Example 2.1.
Consider the polynomial $v(t) = t^3 + t + 1$ of degree three. It turns out that its only real root is

$$t = \left(\frac{3^{-\frac{3}{2}}\sqrt{31}}{2} - \frac{1}{2} \right)^{\frac{1}{3}} - \frac{1}{3\left(\frac{3^{-\frac{3}{2}}\sqrt{31}}{2} - \frac{1}{2} \right)^{\frac{1}{3}}}$$

There are also other two complex roots[1], which we ignore.

Remark 2.1.
The proof of Theorem 2.2 uses some advanced technology, including a computer algebra system. The same applies to Example 2.1. On the other hand, Proposition 2.1 is well known and its proof is rather elementary.

3. Tables and figures

Table 1 shows how to show some data using the `table`environment.

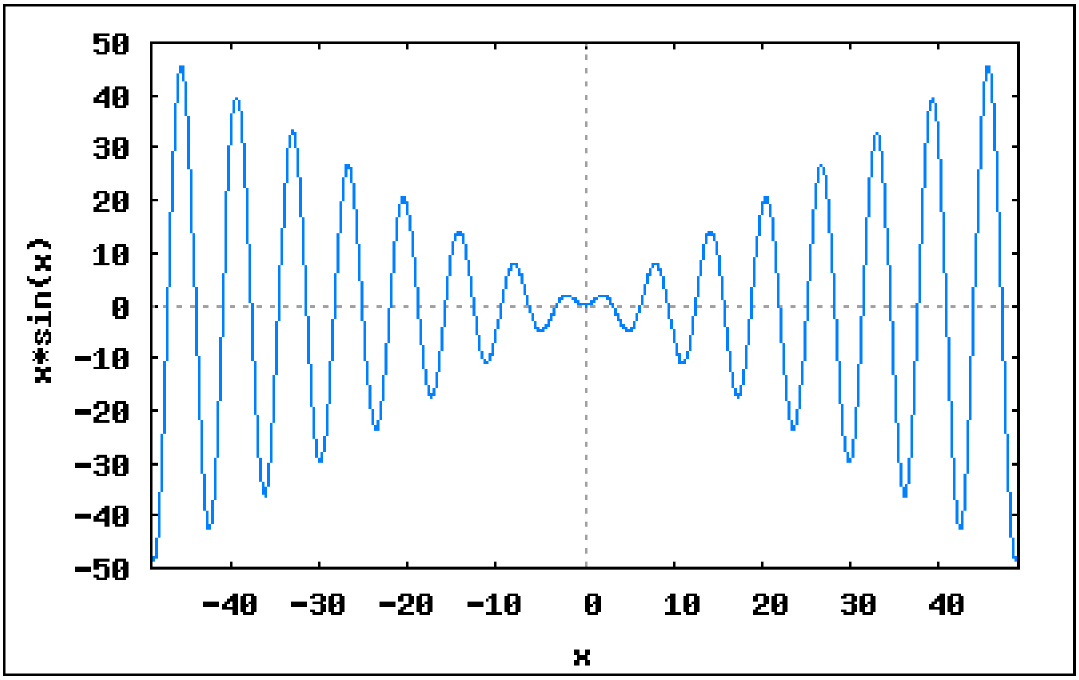
Figure 1 shows how to use the `figure`environment for displaying graphics, etc.

Acknowledgements

The author(s) would like to thank some institutions for support and so on.

[1] *Since the degree of v is 3, we know that there may be at most 3 roots.*

Figure 1. **The graph of $y = x\,sinx$ in the interval [-50,50], created by wxMaxima 0.7.4.**



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