

The logo for mathoverflow features the word "math" in a black serif font, followed by "overflow" in a bold, black italicized serif font. The text is enclosed in a rectangular frame that is grey on the left and bottom, and orange on the top and right.

math***overflow***

Open Science Summit  
October 22, 2011

## Recent Questions

active

4

featured

hot

week

month

- 4 votes 3 answers 216 views **Reference request: representation of type G2 Lie algebras.**  
[rt.representation-theory](#) [lie-algebras](#) [reference-request](#) 20m ago **Dave Anderson** 1,415
- 
- 1 vote 1 answer 32 views **Definable subsets of the integers as an abelian subgroup?**  
[abelian-groups](#) [set-theory](#) 49m ago **Mark Sapir** 15.1k
- 
- 3 votes 3 answers 109 views **Cohomology groups of homogeneous spaces**  
[cohomology](#) [at.algebraic-topology](#) 56m ago **Peter May** 1,696
- 
- 4 votes 1 answer 216 views **What is the identity class of the set of equivalence classes of binary cubic forms of discriminant  $D$ ?**  
[binary-quadratic-forms](#) [nt.number-theory](#) 1h ago **Samuel Hambleton** 101
- 
- 0 votes 0 answers 14 views **When is the Union of embedded smooth manifolds an smooth manifold**  
[differential-topology](#) [smooth-manifolds](#) 1h ago **Mirco** 35
- 
- 6 votes 3 answers 201 views **Convex curves with many inscribed triangles maximizing perimeter**  
[calculus-of-variations](#) [plane-geometry](#) 1h ago **Vladimir Georgiev** 1

## Interesting Tags

- [lie-groups](#) × [lie-algebras](#) ×  
[geometric-invariant-theor](#) ×  
[algebraic-groups](#) ×  
[rt.representation-theory](#) ×  
[ac.commutative-algebra](#) ×  
[ag.algebraic-geometry](#) ×

## Ignored Tags

Tip: When you use the search box, anything between brackets is interpreted as a tag, so the search "[ac.commutative-algebra] decomposition" searches *within* the [ac.commutative-algebra] tag for questions containing the word "decomposition". See more tips and tricks.

Want to help? Consider retagging questions with no arXiv tag.

MO in theory

## MO in theory

If there's something you don't understand ...

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If there's something you don't understand ...  
there's a simpler thing you don't understand.

# MO in theory

If there's something you don't understand ...  
there's a simpler thing you don't understand.

How to do mathematics:

1. Figure out what should be true.
2. Try to prove (or disprove) it.
3. When you fail, distill your failure:
  - ▶ pick a specific example you cannot resolve,
  - ▶ add hypotheses, or
  - ▶ remove hypotheses.
4. Repeat.

## MO in theory

If you find a question interesting, somebody else will too.

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If you can't answer a simple question, maybe somebody else can.



# MO in theory

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Why ask a question on MO?

1. You want to know the answer.
2. Preparing the question for MO forces you to think clearly about the question.
3. Even if it doesn't get answered,
  - ▶ you may end up with a better question, and
  - ▶ you have your thoughts about it recorded.

## MO in theory

Why answer a question on MO?

## MO in theory

Why answer a question on MO?

MO in practice

## MO in practice

I started reading MathOverflow a few months ago, and currently for me it is by far the best online way to find out about current events in math research (at least in my area—number theory). It's just stunning the number of new results and links to key papers I've found on MathOverflow."

– William Stein

## MO in practice

- ▶ Overcome technical obstacles. Find the right people to collaborate with.

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## MO in practice

- ▶ Overcome technical obstacles. Find the right people to collaborate with.
- ▶ Learn a lot!
- ▶ Share/learn “professional secrets.”
- ▶ Meet people. Network by doing mathematics rather than “networking.”

What makes it work?

What makes it work? Software

# What makes it work? Software

The StackExchange software is awesome!

- ▶ very low-friction
- ▶ Google-friendly
- ▶ tags, badges, ...

# What makes it work? Software

Voting

Reputation points

# What makes it work? Software

Voting makes for a high signal-to-noise ratio

Reputation points

# What makes it work? Software

Voting makes for a high signal-to-noise ratio

Reputation points make MO fun, but more importantly scalable.

- ▶ no reputation: ask/answer questions
- ▶ little reputation: vote up, leave comments, vote down
- ▶ more reputation: retag, edit, vote to close/reopen

What makes it work?



What makes it work? Mathematicians

# What makes it work? Mathematicians

- ▶ we love asking, thinking about, and answering questions
- ▶ we revisit the same ground many times

What makes it work?

What makes it work? Community

## What makes it work? Community

Meta ([meta.mathoverflow.net](https://meta.mathoverflow.net)) is a separate discussion forum where we decide on community standards.

- ▶ Developing standards is critical for a self-moderating community.
- ▶ Maintains the purity of the main site.