

Six YouTube channels for learning PURE MATHEMATICS

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Having spent most of my final high school years during the Covid-19 lockdown, I found myself needing to learn a lot on my own, especially math. Initially, this seemed like a challenge, but I soon discovered that learning math from YouTube could be both fun and fulfilling. A few YouTube channels proved to be extremely helpful.

Here are a few YouTube channels to learn Pure Mathematics from, each catering to different levels of learners.

Richard E Borcherds

Richard E Borcherds – a Fields Medal-winning mathematician – offers a treasure trove of content that dives deep into advanced topics in Pure Mathematics. The content is delivered with a clear emphasis on rigorous proofs and theoretical frameworks.

This channel is best suited for graduate students, researchers, and advanced undergraduate students who already have a solid foundation in Mathematics. Borcherds' lectures assume a high level of prior knowledge and are geared towards those looking to delve into the intricacies of Pure Math.

The channel primarily covers higher-level mathematics, with a strong focus on algebra, number theory, and complex analysis. Borcherds' expertise in these areas provides viewers with deep insights and a thorough understanding of complex mathematical theories.

3Blue1Brown

Created by Grant Sanderson, 3Blue1Brown is renowned for its visually stunning and conceptually clear explanations of mathematical concepts. The channel uses a unique visual approach, employing animations to illustrate complex ideas in a way that is both engaging and easy to understand.

High school students, college students, and anyone with an interest in mathematics can benefit from the content of this channel. The content ranges from basic to advanced topics, making it accessible to a broad audience.

3Blue1Brown covers a wide range of mathematical subjects, including calculus, linear algebra, probability, and differential equations. The channel's emphasis on visual learning helps demystify abstract concepts, making them more approachable for learners at all levels.

Blackpenredpen

Run by Steve Chow, blackpenredpen focuses on problem-solving and detailed explanations of mathematical concepts. The channel initially gained fame largely due to marathon integral and derivative videos. These videos, which feature Chow solving a large number of integrals and derivatives in a single sitting, attracted a significant following. His approach to solving problems live on a

whiteboard, coupled with his engaging and energetic teaching style, resonated with many students and math enthusiasts.

The channel is particularly popular for its step-by-step solutions to various math problems, which are presented in an easy-to-follow manner.

High school and university students will find this channel especially useful, as it covers topics that are commonly encountered in secondary and undergraduate education.

Dr Trefor Bazett's channel is dedicated to providing high-quality math tutorials that are both comprehensive and easy to understand. His content is well-structured and covers a variety of topics, with a particular emphasis on helping students grasp fundamental concepts.

Both high school and undergraduate students can benefit from Dr Bazett's tutorials. His clear explanations and methodical approach make it easy for learners to follow along, whether they are reviewing material for class or self-studying.

This channel is extremely useful if you want to learn in-depth about the various types of mathematical series, and it also covers topics such as algebra, calculus, statistics, and linear algebra. Dr Bazett's tutorials often include detailed examples and illustrations, which help you understand the content in an intuitive way.

The Organic Chemistry Tutor

While primarily known for its chemistry content, The Organic Chemistry Tutor also offers extensive tutorials on mathematics. The channel is well-regarded for its thorough and accessible explanations, making complex topics understandable to a wider audience.

High school and undergraduate students will find this channel to be very beneficial, especially those looking for clear and detailed explanations of math topics covered in their curricula.

The channel covers a wide range of subjects, including algebra, trigonometry, calculus, and statistics. The Organic Chemistry Tutor's math tutorials are designed to build a strong foundation, making them ideal for students who need to solidify their understanding of core concepts. The channel also has a large number of examples and practice problems, which are a useful supplement to self-studying.

Mathologer

Mathologer, hosted by Dr Burkard Polster, offers an entertaining and insightful look into various mathematical concepts. The

channel is known for its engaging presentations that explore the beauty and intrigue of mathematics beyond standard curricula.

Math enthusiasts, who want to learn more about math than is conventionally taught will enjoy this channel. Dr Polster's engaging style makes complex ideas accessible and interesting, making it a great resource for those looking to explore mathematics in a fun and informative way.

The channel covers a diverse range of topics, including number theory, geometry, and recreational mathematics. Mathologer's videos often delve into the historical and philosophical aspects of mathematics, providing viewers with a broader perspective on the subject.

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The clear and concise explanations also make it a great resource for self-learners.

The channel covers a broad spectrum of mathematics, including algebra, calculus, and geometry. It also provides helpful tips and techniques for solving standard math problems, making it a valuable resource for students preparing for exams.

Trefor Bazett