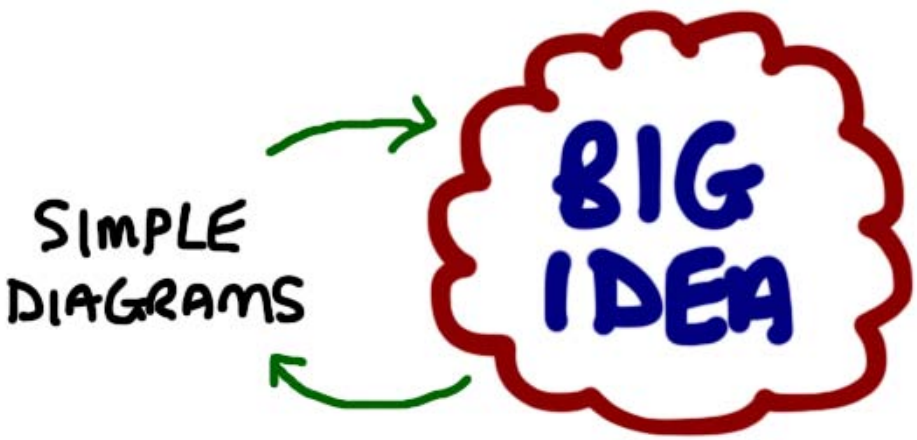
Big Ideas from Simple Diagrams



Nevil Hopley

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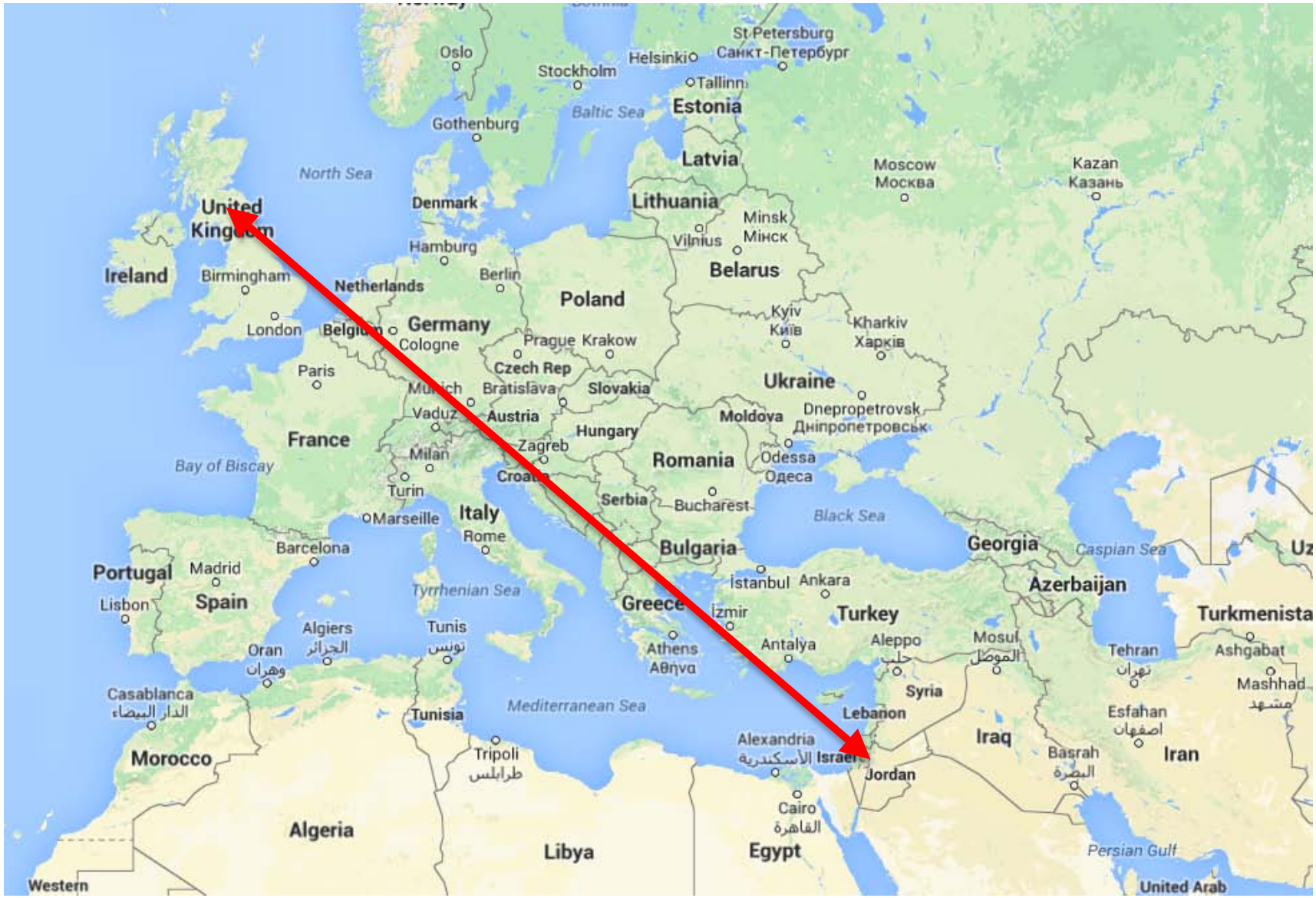
Teacher of IB Maths Higher Level

Head of Mathematics Department

www.calculatorsoftware.co.uk/nspire

Journey: 2496 miles (4015km)



This talk will have a....

A Beginning

Why the topic for this workshop?

A Middle

Argand Diagram for Complex Numbers
The Sine Rule / Law of Sines
Function Shapes and Rates of Change
(Sum of Normal Distributions is also Normal)

An End

...in 60 minutes' time!

And you can download all that you see today from

www.calculatorsoftware.co.uk/nspire

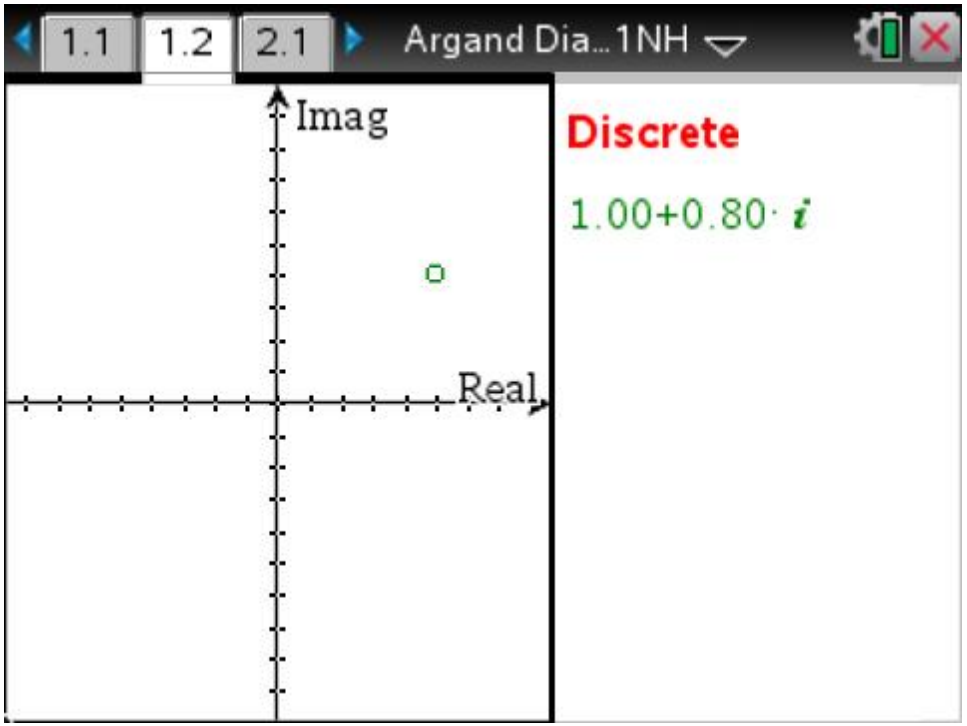
IB Theory of Knowledge

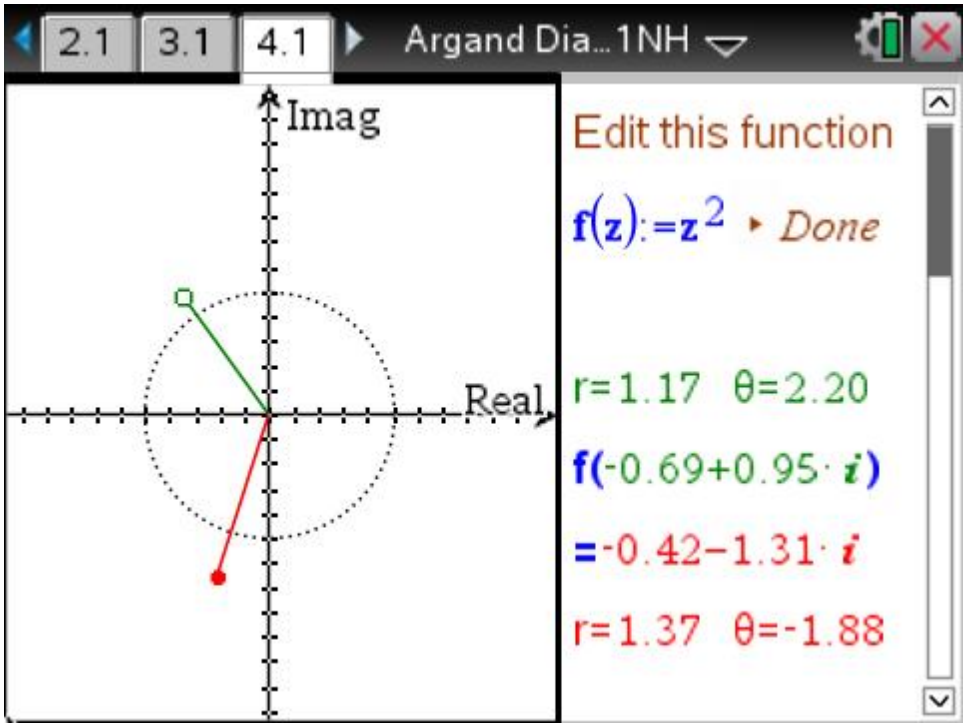
"Teachers have freedom to select a teaching methodology … that will convey the theoretical foundation of essential concepts, and may provide an environment in which these concepts can be discussed and debated."

"The focus of the discussion should be …. on the quality of justification and a balanced approach to the knowledge claim in question."

Argand Diagram

Argand Diagram v1NH.tns

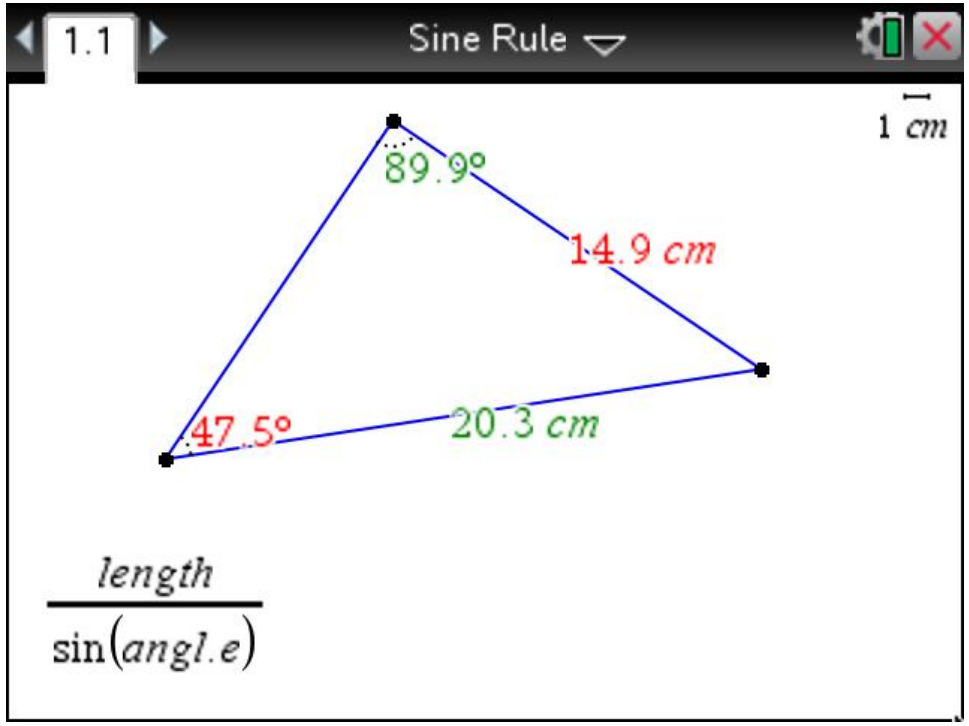




f(z):=z² **f(z):=z³** **f(z):=conj(z)** **f(z):=1/z**

The Sine Rule / Law of Sines

$$\frac{a}{\sin(A)} = \frac{b}{\sin(B)} = \frac{c}{\sin(C)}$$



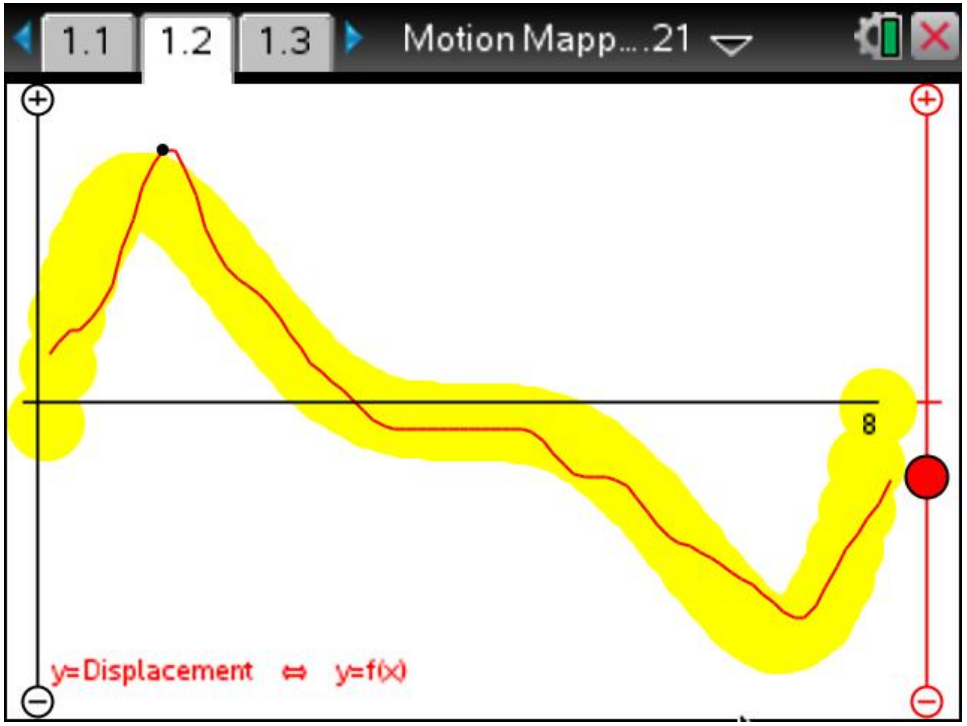
Students need to see this constructed from scratch.

Significance of value generated?

Reciprocal formula

Function Shapes and Rates of Change

Motion Mapper v0.21.tns

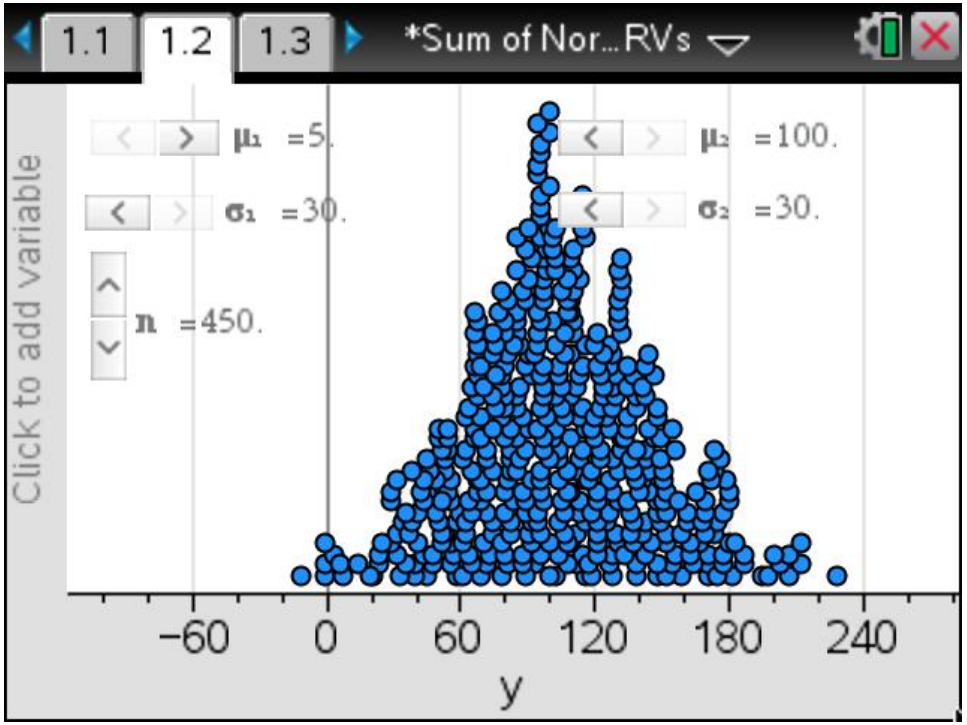


Distance/Time Graph
Rate of Change
Gradients
Stationary Points
Graphs of the Derivative

Left or Right Handed?

Best on the TI-Nspire iPad App!

Sum of Normal Distributions is … Normal?



$X_1 \sim N(\mu_1, \sigma_1^2)$
$X_2 \sim N(\mu_2, \sigma_2^2)$

$Y = X_1 + X_2$
$E(Y) = E(X_1) + E(X_2)$
$Var(Y) = Var(X_1) + Var(X_2)$

But is Y~Normal ?

Want Copies of Everything?
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Thank you for coming to my talk.

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