

**Ecphrastic poetry & the
development of professional
literacy in mathematics**

What is ecphrastic poetry?

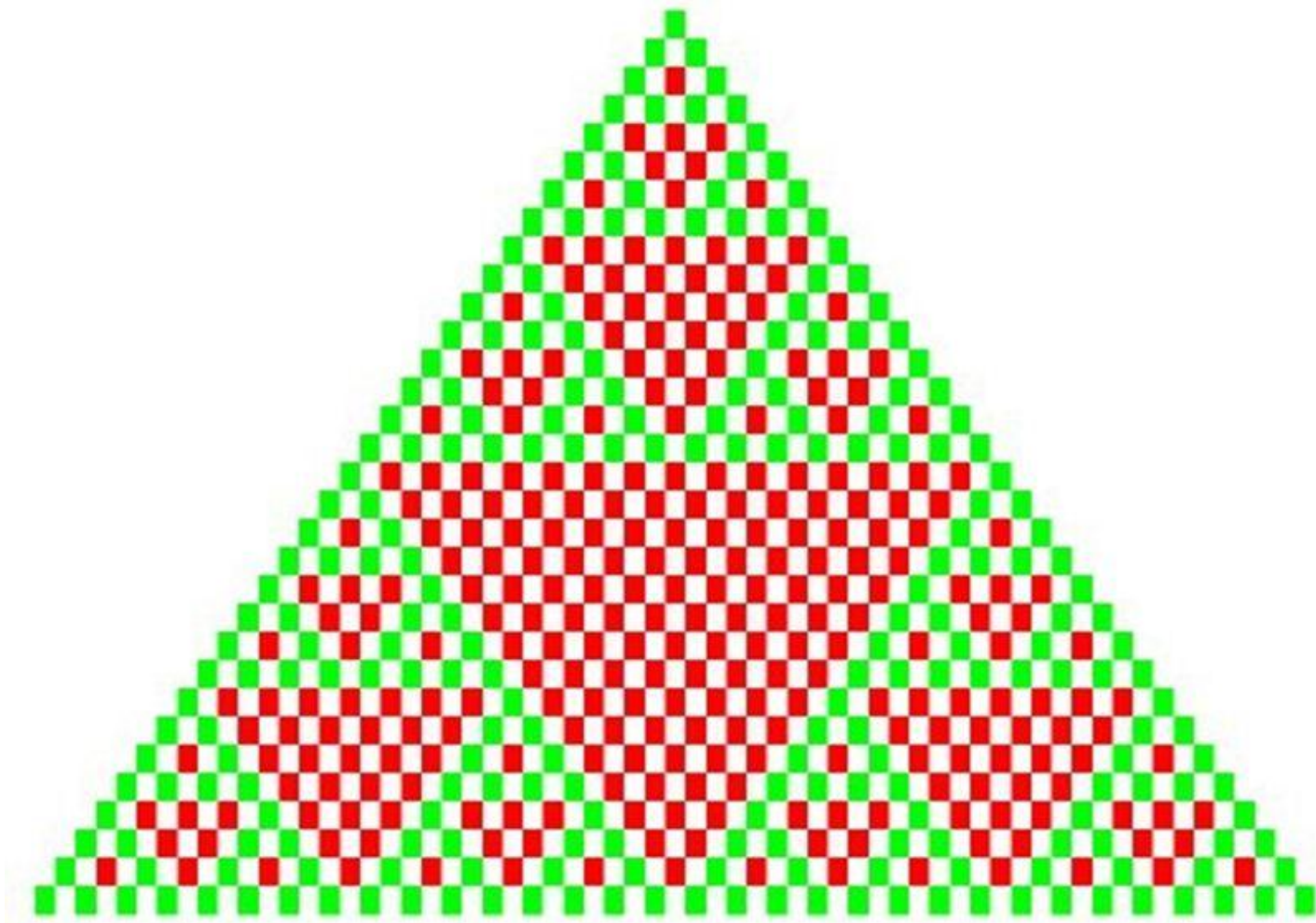
- Ecphrastic poetry is the conversation between two pieces of art. The writer interprets a work of visual art and then creates a narrative in verse form that represents his or her reaction to that painting, photograph, sculpture or other artistic creation.

<http://www.firkinfiction.com/11.html>

Ecphrastic poetry and mathematics

- How do you write a mathematics-related in an ecphrastic manner?
- Complete the following steps:
 1. View a stimulus image and identify a mathematics-related concept it evokes.
 2. If required, write down the concept, definition, law, formula etc.
 3. Identify a suitable poetry type and write the poem.

What concept does this image evoke?

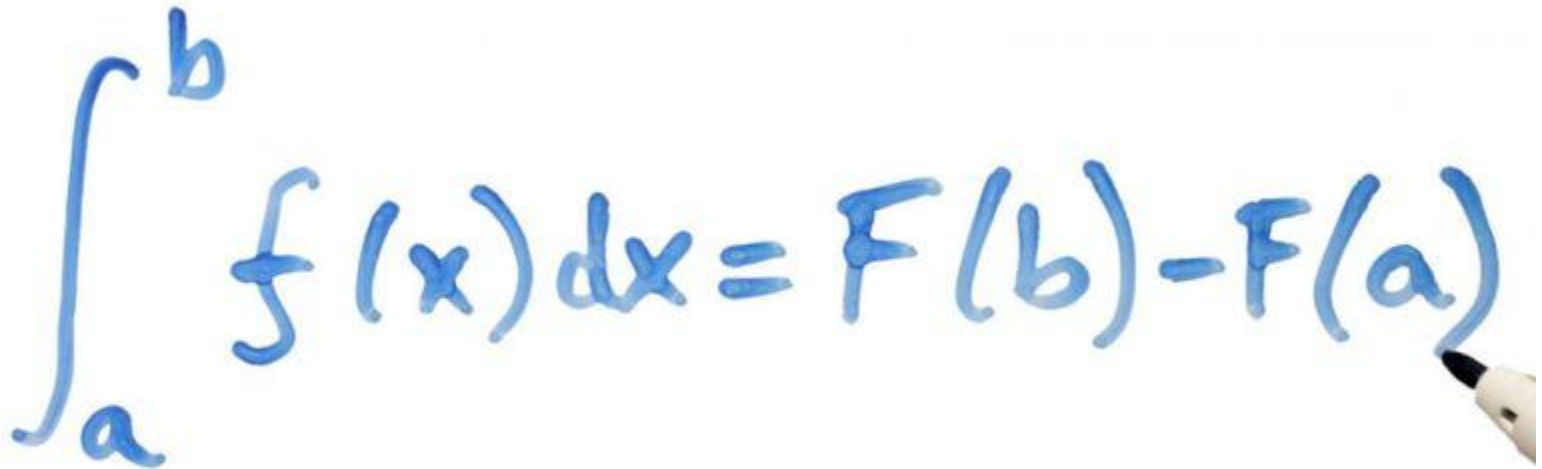


Pascal's Triangle

Example Haiku poem

*Pascal's Triangle:
writing it out is a chore.
How fast does it grow?*

What concept does this image evoke?

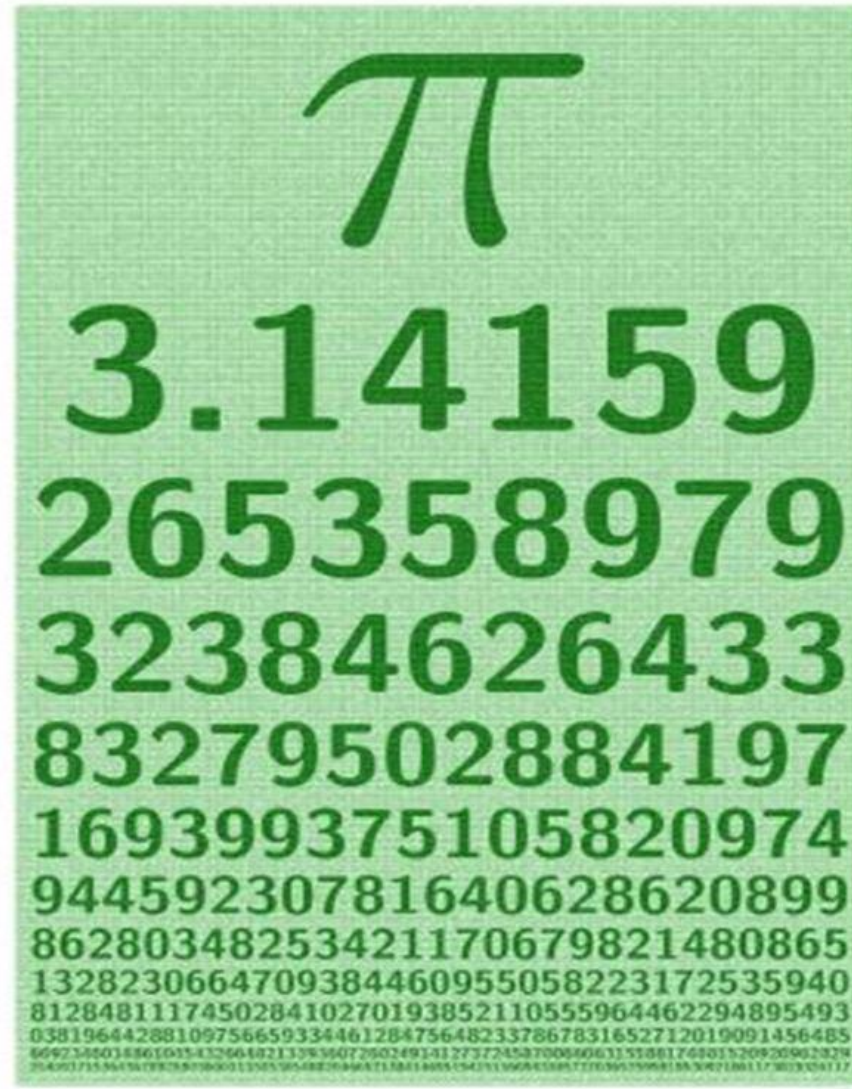
$$\int_a^b f(x) dx = F(b) - F(a)$$
The image shows the mathematical formula for the definite integral of a function f(x) from a to b, which equals the difference in the antiderivative F(x) between b and a. The formula is written in blue ink on a white background. A white marker tip is visible at the bottom right of the equation, pointing towards the end of the expression.

Anti-derivatives and calculus

Example Limerick poem

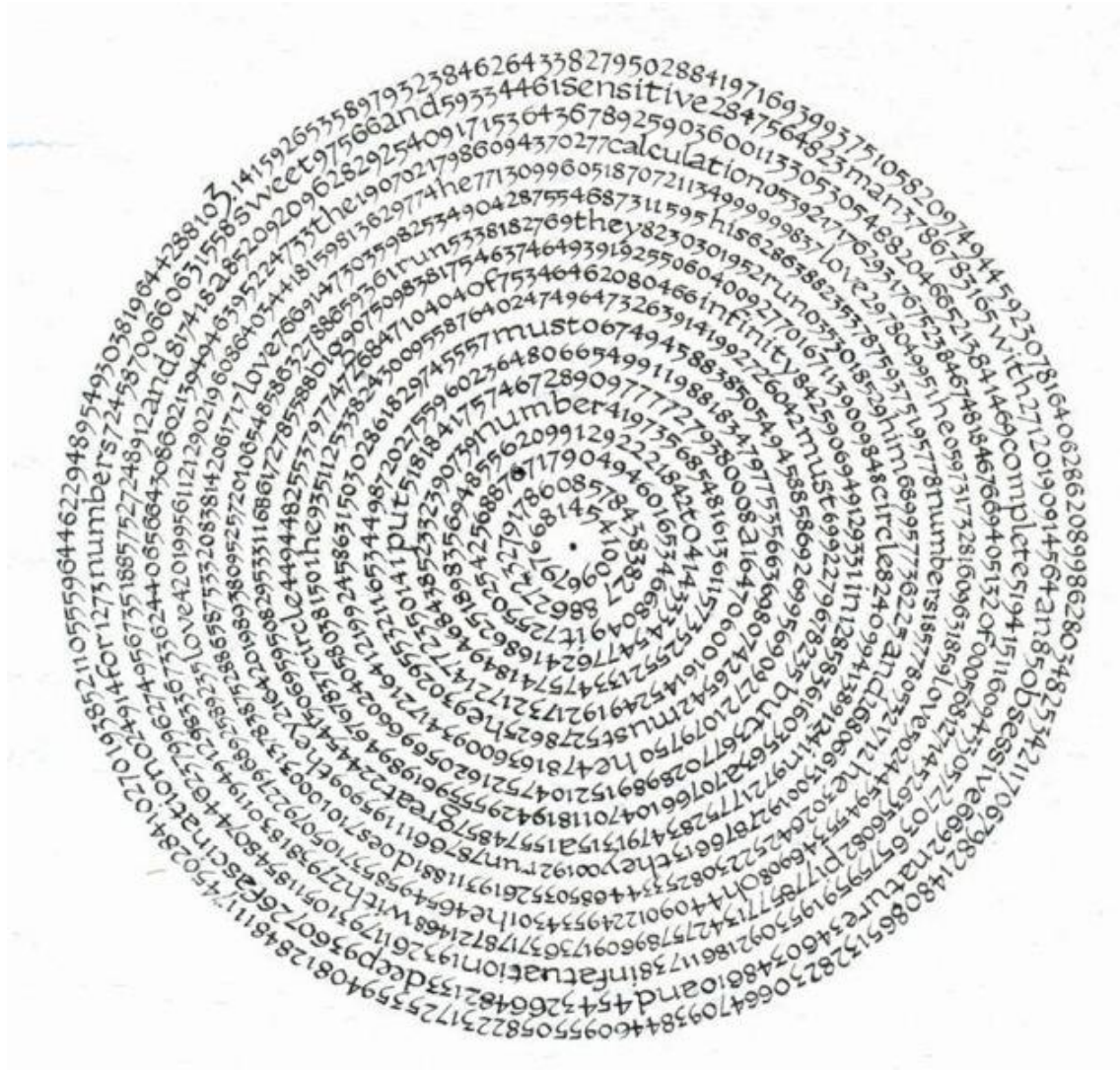
A calculus student upset as could be
That his anti-derivative just didn't agree
With the answer in the book
Even after a second look
Indeed it was off, but by a constant C.

What concept does this image evoke?



PI's relationship to circle-related calculations (circumference, area etc.)

Example concrete poem



What concept does this image evoke?



Currency denominations

Example free verse poem

Penny, penny, easy spent,
Copper brown and worth
one cent.

Nickel, nickel, thick and fat,
You're worth 5. I know that.

Dime, dime, little and thin,
I remember—you're worth
10.

Quarter, quarter, big and
bold,

You're worth 25, I am told.
Half a dollar, half a dollar,
Giant size.

50 cents to buy some fries.

Dollar, dollar, green and
long,

With 100 cents you can't go
wrong.

What concept does this image evoke?



Properties of triangles

Example cinquain poem

triangles

pointy edges

revolving, rotating, angling

Triangles are all different.

180°

Example acrostic

Acute angles are less than ninety degrees.

Neither an acute angle nor an obtuse angle is a right angle.

Greater than 90° and less than 180° are obtuse angles.

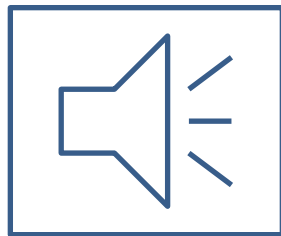
Like their arcs of 60° , circle's central angles also have 60° .

Equivalent angles like vertical angles are congruent.

Supplementary angles are a pair of angles that add to 180°

What concept does this musical composition evoke?

French nursery melody,
Frère Jacques.



Geometrical shapes

Example re-worked song lyrics

This is a square, this is a square
How can you tell? How can you tell?
It has four sides, all the same size
It's a square; it's a square

This is a circle, this is a circle
How can you tell? How can you tell?
It goes round and round, no end can be found
It's a circle; it's a circle

Activity

Using the given stimulus material, create the following types of poetry:

- Free verse
- Acrostic
- Cinquain
- Haiku
- Limerick

STIMULUS IMAGE 1



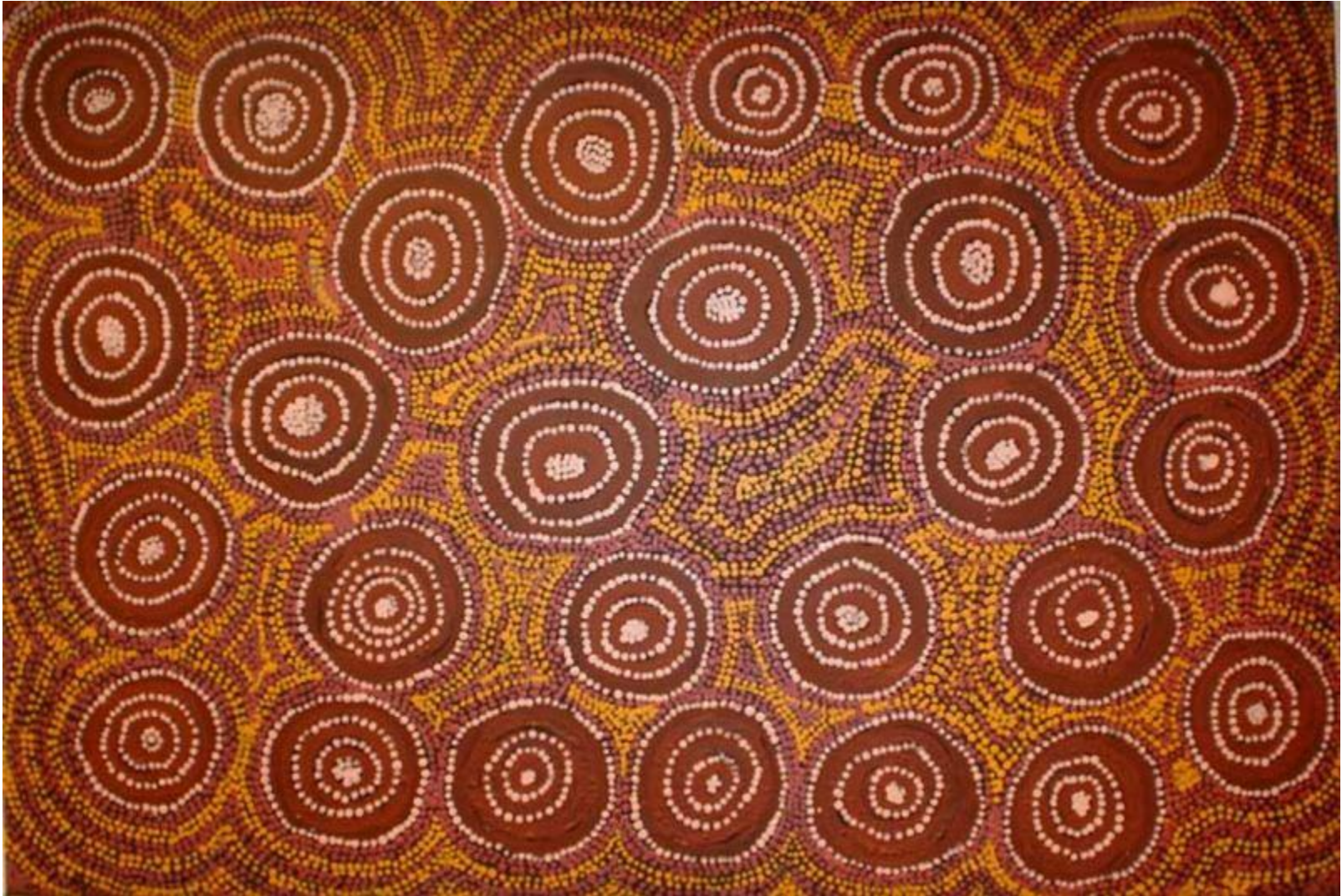
STIMULUS IMAGE 2

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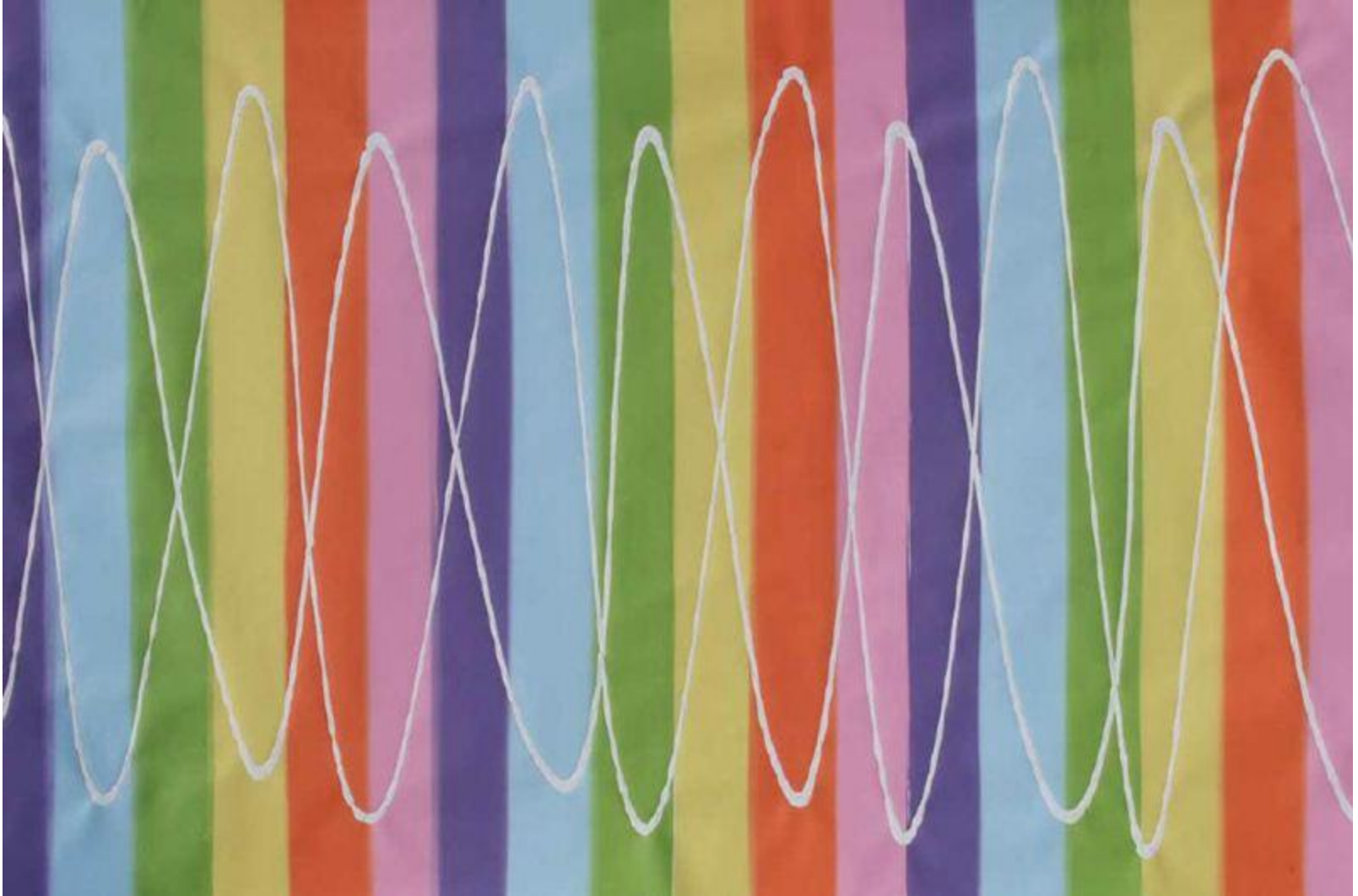


“Algebra class will be important to you later in life because there’s going to be a test six weeks from now.”

STIMULUS IMAGE 3



STIMULUS IMAGE 4



STIMULUS IMAGE 5

