



DIGITAL ASSESSMENT IN MATHEMATICS BEYOND MULTIPLE CHOICES

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Solve the equation for x :

$$2x = 4$$

A. $x = 1$ B. $x = 2$ C. $x = -1$ D. $x = 3$ E. $x = 0$

THE SOLUTION WE ADOPTED: NUMBAS

Numbas
really versatile maths e-assessment



Numbas is an easy way to create online tests. Our free web-based system helps you build the exams you need to challenge your students, complete with videos and interactive diagrams.

[See a demo](#)

Why use Numbas?

Versatile



Numbas works online and offline. You can upload your tests to learning platforms such as Moodle or Blackboard, or download to a DVD or USB stick.

Your Own Style



Numbas is designed for a range of needs. Users can apply different themes, and add videos, diagrams and images to their tests and assessments.

Free and Flexible



Numbas is free and open-source, so you can change it to make it work for you. It works with all modern browsers and virtual learning environments.

Gabriele De Chiara, Maths & Physics

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- It's free and open source!
- Large public database of questions
- Portable: the test can be downloaded on a *USB stick*, embedded in a *webpage* or used for assessment using *Moodle* or *Blackboard*.

EXAMPLE 1: QUADRATIC EQUATIONS

NUMBAS

Quadratic equations

Find the roots of the following quadratic equation.

Solve for x :

$$2x^2 - 3x + 1 = 0$$

The least root is $x =$. The greatest root is $x =$

Enter the least root first. If the roots are equal, enter the root in both input boxes.

Enter the roots as fractions or integers, not as decimals.

Submit answer

10 marks.

Try another question like this one

Reveal answers

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Hide feedback

Gap 1

Your answer is incorrect.

Gap 2

Your answer is numerically correct. You were awarded 5 marks.

EXAMPLE 2: BINOMIAL EXPANSION

NUMBAS

Binomial Expansion 2

Without using brackets, expand the following (remember to type a*b or a b with a space):

a)

$$(6a + 2b)^2$$

36a²+24a b+4 b²

36a² + 24ab + 4b² ✓

Score: 5/5 ✓

Show feedback

b)

$$(6a - 6b)^2$$

5 marks.

c)

$$(1 + 2x)^3$$

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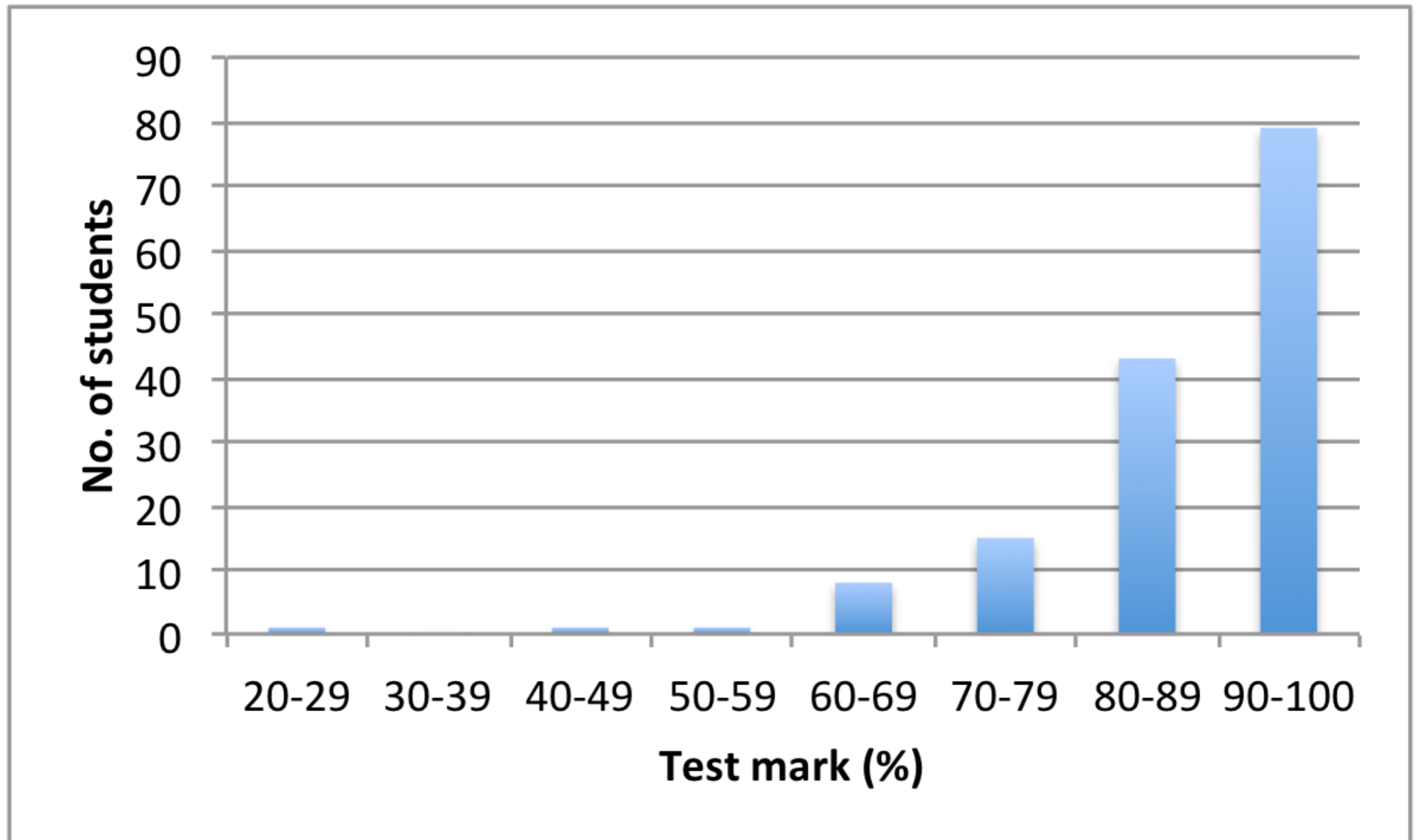
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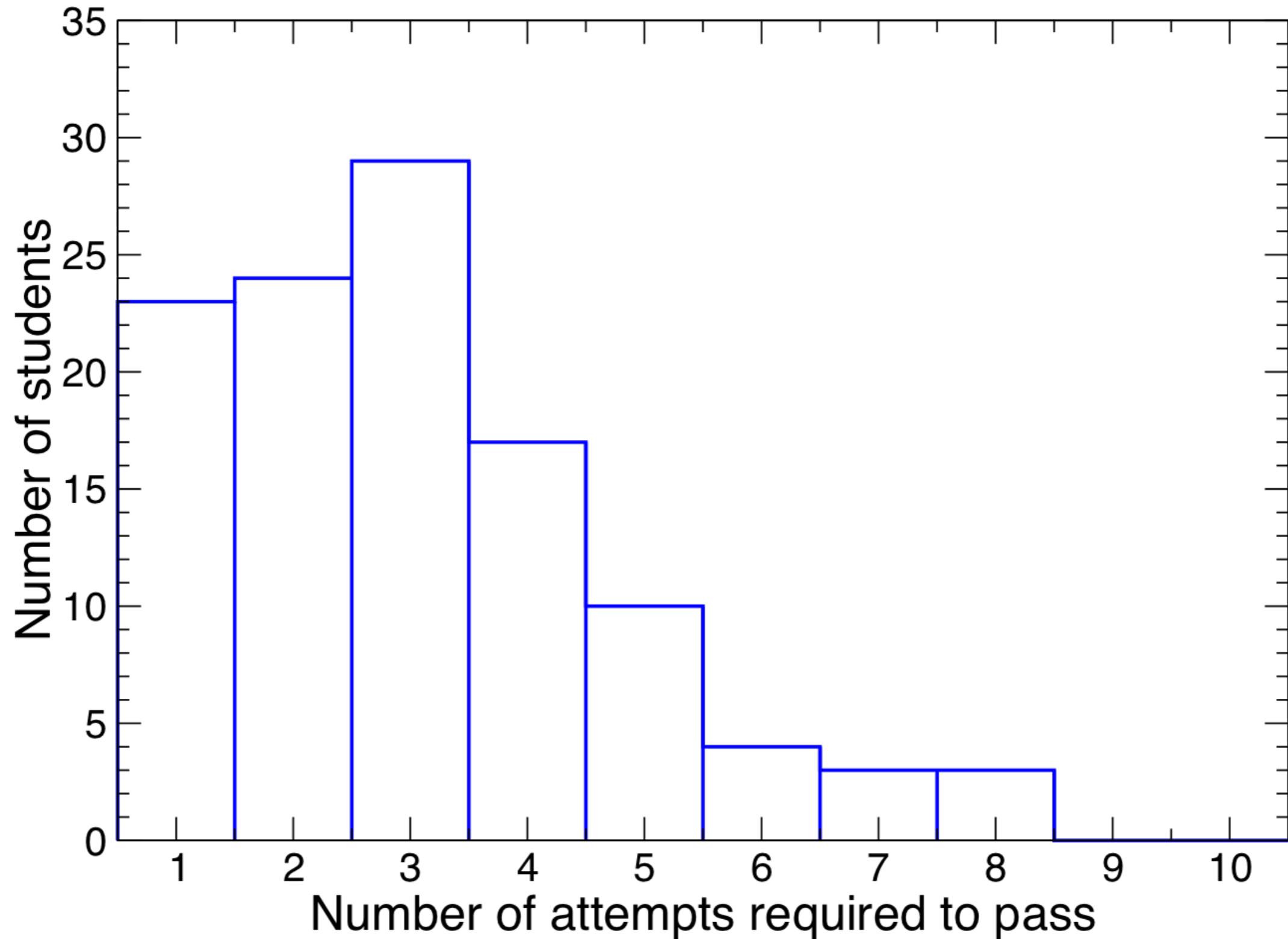
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- Questions were the same but the numbers were **randomised**.

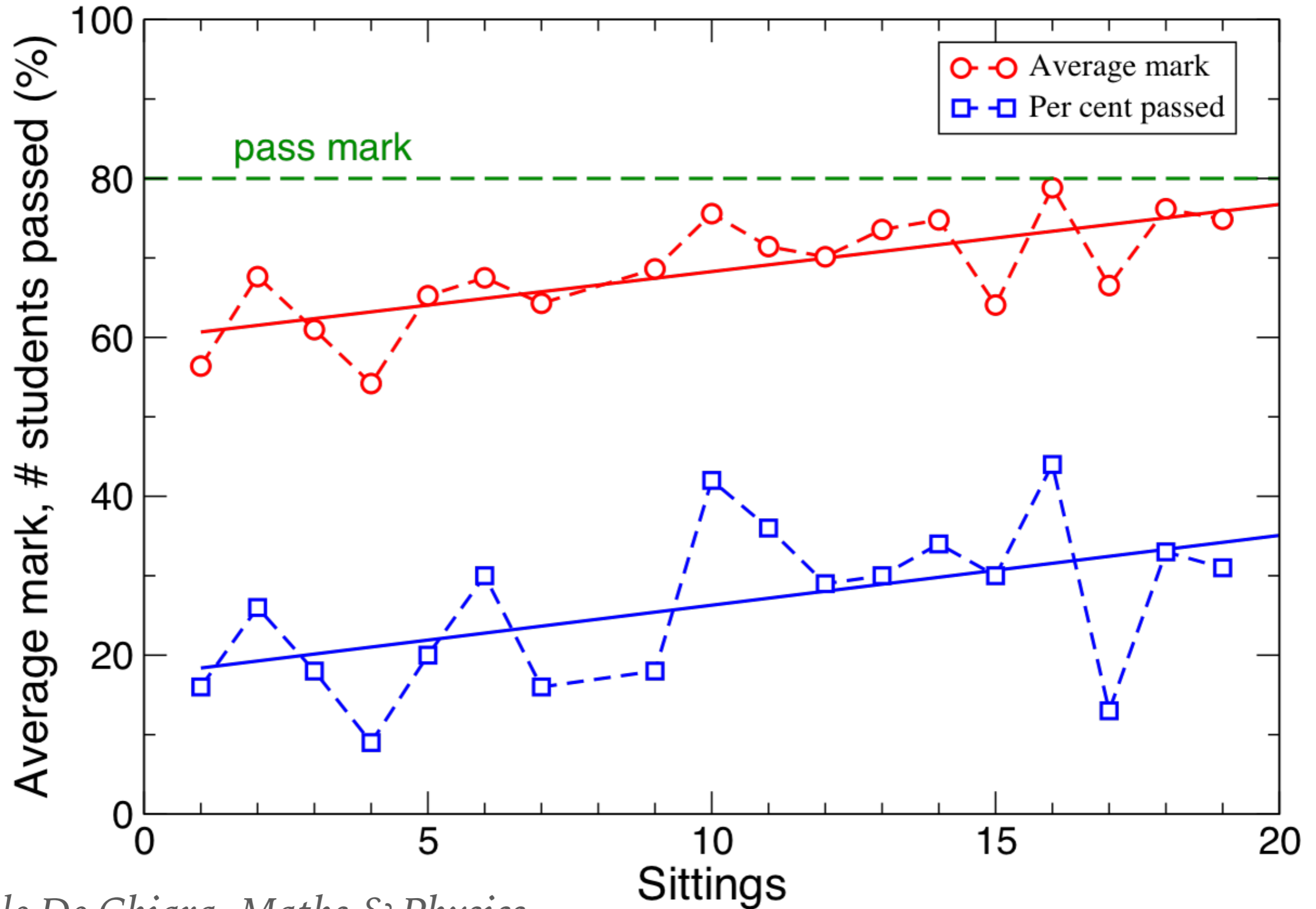
PMA1020: DISTRIBUTION OF THE MARKS IN THE STUDENTS FIRST ATTEMPT



RESULTS - AMA1020



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- NUMBAS is an excellent assessment
- It requires some configuration examples available
- After the success of the pilot project to introduce it more often in our courses
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