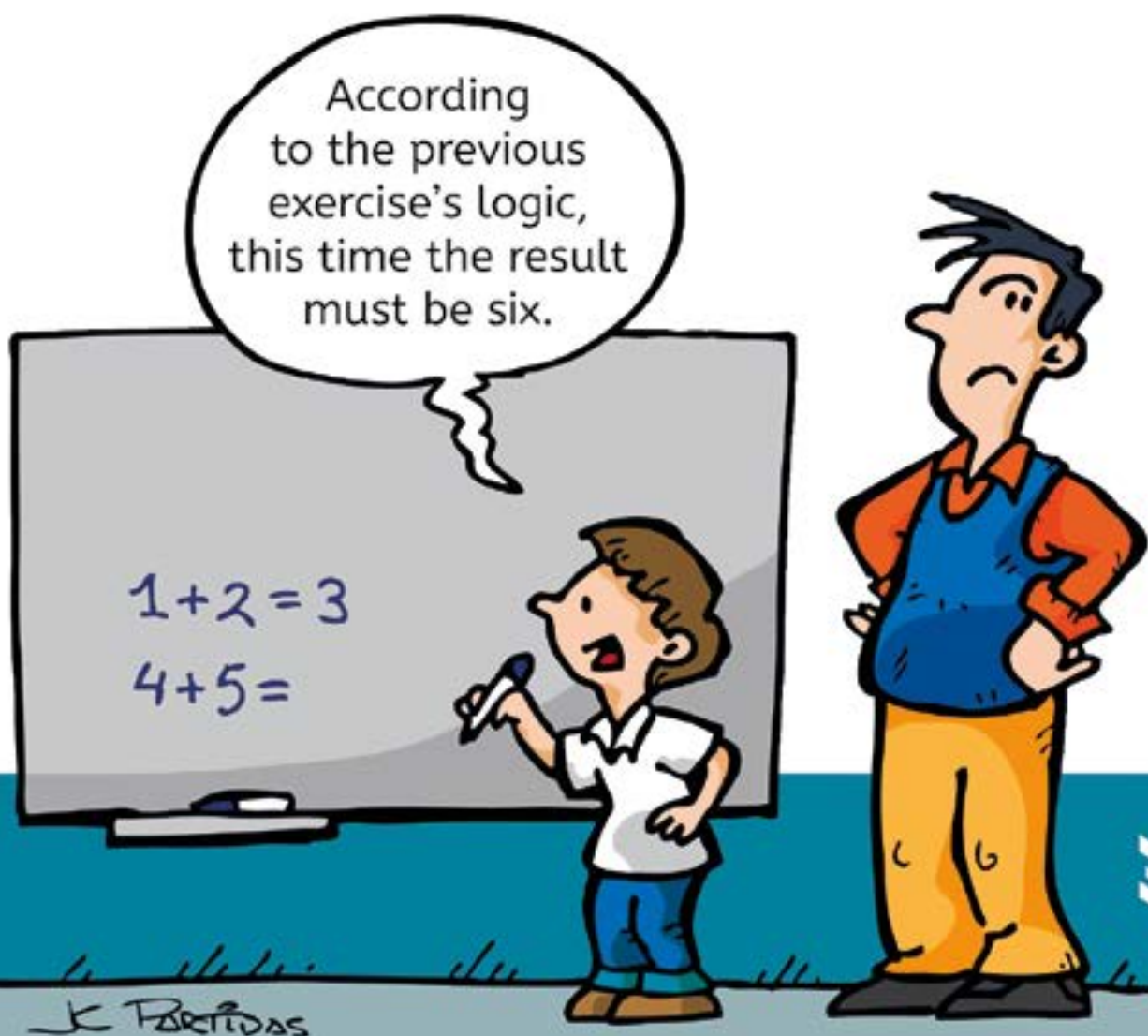


Luís Menezes • Pablo Flores • Floriano Viseu  
Helena Gomes • António Ribeiro  
Ana P. Martins • Mónica Guitart

# Humour to learn Mathematics

Mathematical tasks to laugh and learn







E-BOOK EDITION

July, 2021

 EDIÇÕES ESGOTADAS

Viseu | Porto | Lisboa | Aveiro

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Politécnico  
de Viseu

[www.ipv.pt](http://www.ipv.pt)

**Title:** Humour to learn Mathematics: mathematical tasks to laugh and learn

**Original title:** Humor para aprender a Matemática: tarefas matemáticas para rir e aprender

**Authors:** Luís Menezes, Pablo Flores, Floriano Viseu, Helena Gomes,

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**Cover:** Illustration of Juan Carlos Partidas

**Language revision:** Susana Amante and Ana Maria Costa

**Final review:** Ana Maria Oliveira | Edições Esgotadas, Lda.

**ISBN:** 978-989-9015-89-0

**DOI:** <https://doi.org/10.34633/978-989-9015-89-0>

**Design:** Edições Esgotadas, Lda.

This book was produced as part of the HUMAT: Humour in Mathematics Teaching Project. This work is funded by National Funds through the FCT - Foundation for Science and Technology, I.P., within the scope of the project Ref. UIDB/05507/2020. Furthermore, we would like to thank the Centre for Studies in Education and Innovation (CI&DEI) and the Polytechnic of Viseu for their support.



<https://sites.google.com/view/humatproject/home>

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(language revision)



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# Introduction

Good mood and wellbeing make work and learning much easier. And this is what humour is really all about, to make people feel well and to make them laugh. Humour will minimise stressful situations and facilitate communication.

Among the different forms of humour, graphic humour, based on comic strips and cartoons, is constantly present in magazines, newspapers and on the internet. In the HUMAT: Humour in Mathematics teaching project, we have created a set of mathematical tasks based on different graphic humour situations created by different authors that are available on the internet and in magazines and focus on several mathematical contents which are to be taught over the different school years.

This book is therefore made for students and its aim is to support the learning of Mathematics, both in the classroom and outside the classroom, always relying on humour and good mood.

In all the tasks assigned in this book, we present a comic strip or a cartoon and we ask students to reflect on a set of questions about the strip or the cartoon. These questions were developed to stimulate students' mathematical thinking and, hopefully, make them feel good. In all tasks, the initial question tries to get students to describe the situation and enjoy the humorous twist of the said situation. To help them answer this question, we suggest the following guidelines that focus on four points:

- **Setting** (in which context/environment do the events take place? What are the elements depicted in the picture that make us identify that context?);
- **Subjects** (who are the characters? What do we know about them? What do they represent?);
- **Action** (what is happening?);
- **Plot twist/unexpected ending** (what makes the situation funny?).

To illustrate what can be expected of this kind of activity, we used a “Mafalda” strip by Quino<sup>1</sup>:



<sup>1</sup> <https://books.google.pt/books?id=2YsBEAAQBAJ&pg=PA71&dq=quino+mafalda+pentagon+kremlin&hl=pt-PT&sa=X&ved=2ahUKEwjWoa-1rqvsAhWIHhQKHc5bBP0Q6wEwAHoECAIQAQ#v=onepage&q=quino%20mafalda%20pentagon%20kremlin&f=false>

The comic strip shows us a school **setting**, a Mathematics classroom. The **subjects** are the teacher, depicted alone in the first two panels, and the students (Mafalda, as usual, insists on sharing her point of view and therefore stands out from the crowd). The **action** is related to Geometry as the teacher is doing her best to introduce the study of a geometrical shape: the pentagon. She completes her introduction showing a picture of the polygon. In the second panel, someone asks, to the teacher's surprise (and ours): "And tomorrow the Kremlin?" The third panel brings **the plot twist/unexpected** ending as we realise that Mafalda switches from the notion of the pentagon/polygon (mathematical context) to the Pentagon Headquarters of the US Department of Defence (political context) and we understand how cunning and astute Mafalda really is when she says "For the sake of Balance". After this initial question, the tasks proceed with other questions that focus on the mathematical content the situation involves.

The tasks are directed to different school attendance years and were designed to deal with different mathematical contents, but they also have a different estimated length. Some are short, others are longer. In all cases, a written text is required. Tasks can be carried out individually or in groups, and their findings can be shared and discussed. The HUMAT project has a website (<https://sites.google.com/view/humatproject/in-the-news>) where results produced in the classroom or outside the classroom can be shared.

Finally, it should be noted that the book includes tasks, mentioned in the text, which were taken from the book *Humor no ensino da Matemática, tarefas para a sala de aula*, a book designed for teachers, published in 2017<sup>2</sup>. The book also includes other tasks that are entirely new and are sorted out. The tasks are sorted according to the similarities between their topics.

In the last section of the book, we attached all the comic strips and cartoons the way they were consulted. Whenever the strips and cartoons were not written in English, the text was translated to make it easier to read.

We hope the tasks proposed in this book will contribute to the learning of Mathematics in a fun and challenging way.

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<sup>2</sup> Available at [https://repositorio.ipv.pt/bitstream/10400.19/4863/4/Livro\\_humor\\_no\\_ensino\\_da\\_matematica\\_122017.pdf](https://repositorio.ipv.pt/bitstream/10400.19/4863/4/Livro_humor_no_ensino_da_matematica_122017.pdf)

# Mathematical tasks



## Go forth... march on!<sup>3</sup>

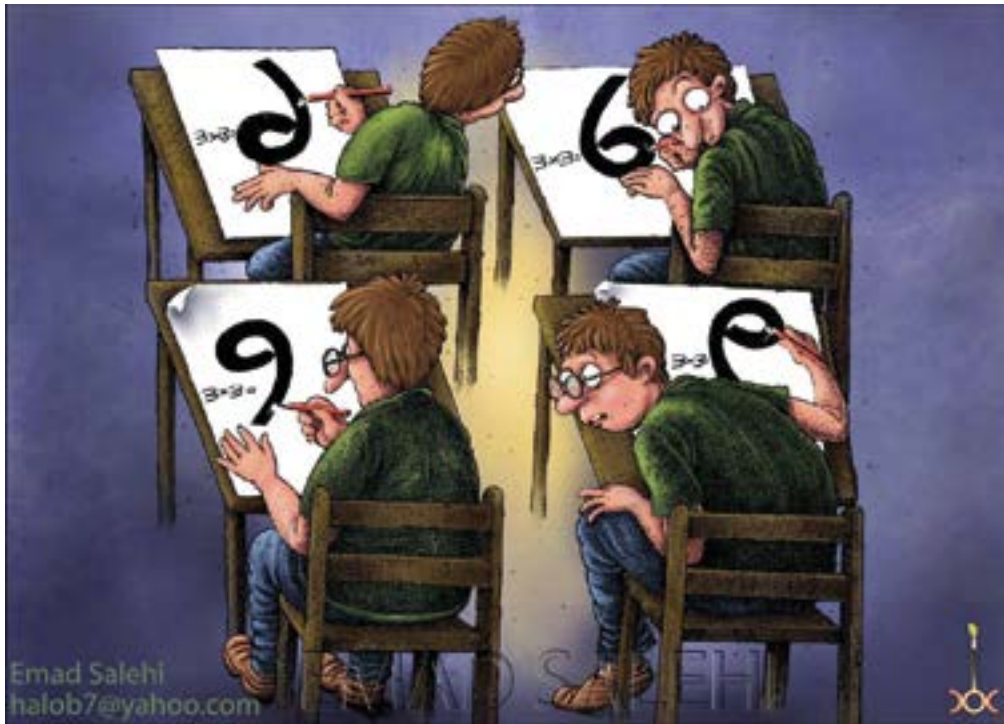


1. Describe the situation depicted. What makes it funny?
2. Why did Pythagoras's friends react the way they did?
3. Who will cover the shortest distance? How do we know that?
4. Is it possible to compare the distances covered by Pythagoras and by his friends? If so, how will we do that?

➔ Check the original source on page 41

<sup>3</sup> This task is based on a cartoon by Craig Malamut, available at <https://www.pinterest.pt/pin/303852306086557727/>.

## There's no use...<sup>4</sup>



1. Describe the situation depicted. What's so funny about it?
2. Who is cheating? How do we know that?
3. Mathematically speaking, how can we explain what happened in this panel?

➡ Check the original source on page 42

<sup>4</sup> This task is based on a cartoon by Emad Salehi, available at <https://www.pinterest.pt/mabsolutamente>.

## Geometry, what do I need you for?<sup>5</sup>

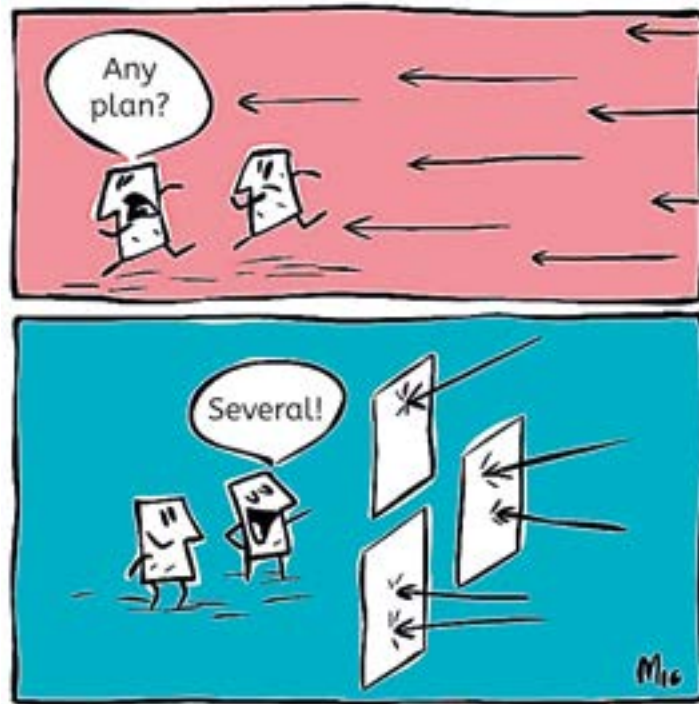


- 1 Describe the situation depicted in the comic strip. What makes the situation funny?
- 2 Is Paige right about the usefulness of Mathematics?
- 3 What do you think of the solution suggested by Paige to solve her mother's problem?
- 4 How would you solve the problem raised in the last panel?

➞ Check the original source on page 42

<sup>5</sup> This task is based on a cartoon by Bill Amend, available at <https://www.foxtrot.com>.

## Plan or planes?!<sup>6</sup>



1. Describe the situation depicted in the cartoon. Why is this situation funny?
2. Can you explain the use of the idea of “plan” in the pictures?
3. What kind of relationship can planes have between them?
4. Will it be possible for any of the arrows to reach the two friends, taking into consideration the different planes displayed? Why/why not? How many planes would be necessary to prevent the attack?

➡ Check the original source on page 43

<sup>6</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a cartoon by Marlon Tenório).



## One day the house comes crumbling down...<sup>7</sup>



1. Describe the situation depicted in the cartoon. What makes it funny?
2. What does “according to the plan the house is complete” mean?
3. What kind of “plans” are the characters talking about in this panel?

➔ Check the original source on page 43

<sup>7</sup> This task is based on a cartoon by John Le Carré, available at [https://www.cartoonstock.com/directory/j/john\\_le\\_carre.asp](https://www.cartoonstock.com/directory/j/john_le_carre.asp).

## A meeting of straight lines...<sup>8</sup>



1. Describe the situation depicted in the strip. Why is it funny?
2. Why does the straight, blue line seem upset in the last panel?
3. What do we know about the distance between two parallel lines and how do we determine it?

➡ Check the original source on page 44

<sup>8</sup> This task is based on a cartoon by Marlon Tenório, available at <http://www.marlontenorio.com>.

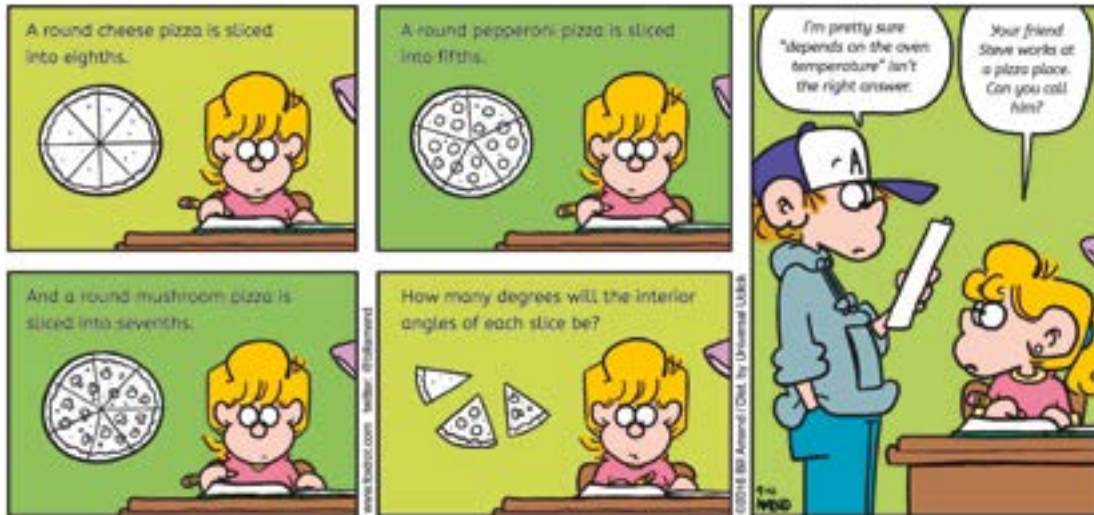
## Extra touches!<sup>9</sup>



1. Describe the situation depicted in the comic strip. What was, in your opinion, Paige's intention? Why is the situation funny?
2. What do you think of the way Paige found to associate the three different angles with examples of our day-to-day reality? Can you suggest additional examples to illustrate each one of those angles?
3. What do we call the angles that allow us to obtain, using the first one, the other two angles ( $90^\circ$  and  $180^\circ$ )? What are their values?
4. How can we obtain a full angle from each one of the three angles, individually or by combining at least two of them?
5. The Degree unit is not the only conventional temperature measurement unit used around the world. Look for other units used to measure temperature, namely those used in the USA, the country of origin of the comic strip and compare your findings with what you know about the Degree unit.

➔ Check the original source on page 44

## Pizzas and angles<sup>10</sup>

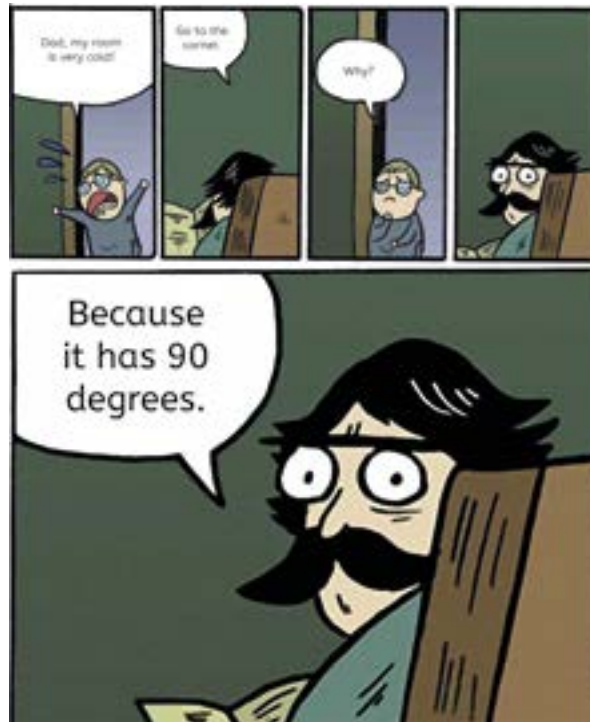


1. Describe the situation depicted in the comic strip. What do you think of the solution Paige came up with? Why is the situation funny?
2. Note that it is difficult, if not impossible, to make a perfectly round pizza. Let's suppose, for the sake of argument, that you are able to do it. Check whether it is possible to divide the pizza into 5, 7 and 8 equal parts. Which is the amplitude of each angle? What can you conclude?
3. If you know the amplitude of the angle of a slice of a pizza that was cut into 12 equal parts, would you know the amplitude of the slices obtained when the pizza is divided into 6 or 4 equal parts?

➡ Check the original source on page 45

<sup>10</sup> Task available in the book *Humor no ensino da Matemática*, tarefas para a sala de aula (based on a Bill Amend's strip).

## Degrees and degrees<sup>11</sup>

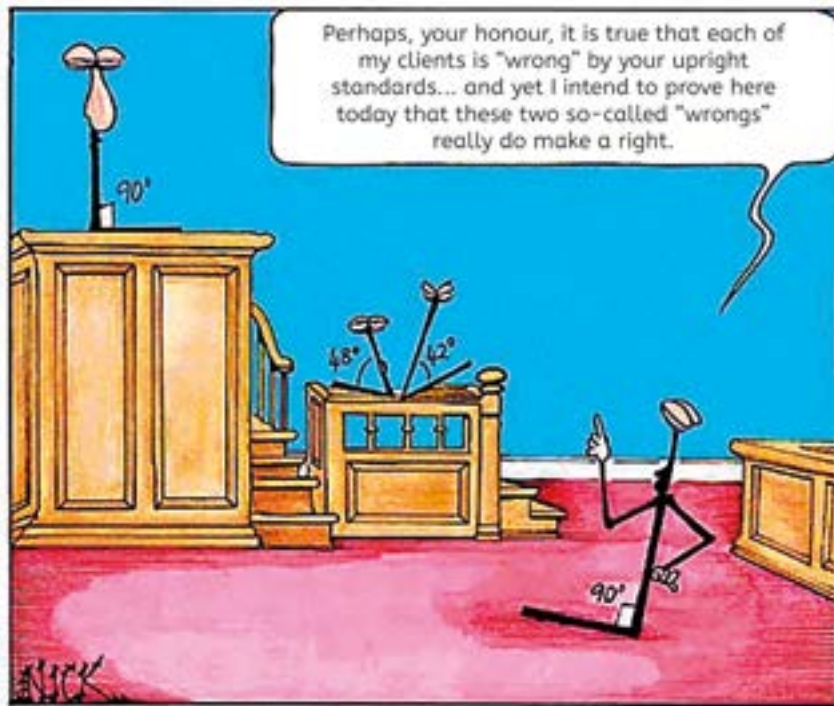


1. Describe the situation depicted in the strip. Why is it funny?
2. Why does the father send his son to one of the corners of the room?
3. On the plan, the room has a rectangular shape. What will be the sum of the room's internal angles?
4. If on the house plan the room has the shape of any quadrilateral, what will be the sum of the internal angles of that figure?

➔ Check the original source on page 45

<sup>11</sup> Comic strip available at <https://www.pinterest.pt/devinjboyce/stare-dad/?autologin=true>.

## Rightness!<sup>12</sup>



1. Describe the situation depicted in the strip. What makes it funny?
2. The judge and the lawyer are right. And what about the defendants, are they right as well? And what about the two defendants together?
3. What are the angles/defendants depicted in the cartoon called?

➡ Check the original source on page 46

<sup>12</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Nic D. Kim's cartoon).

## Equal, despite different!<sup>13</sup>



1. Describe the situation depicted in the strip. Why is it funny?
2. Is the little boy right?
3. Will the boy and his father take the same number of steps to get to the other? What will vary, then?

➔ Check the original source on page 46

<sup>13</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on an Alexandre Beck's comic strip).

## Charge!<sup>14</sup>



Hagar, the Horrible, Chris Browne

1. Describe the situation depicted in the comic strip. What was Lucky Eddie's intention and what strategy did he use? Why is the situation funny?
2. How many numbers will Lucky Eddie have to count before the attack? What were the numbers used? And what representation did he use?
3. How could Hagar reduce the waiting time? What if he wanted to push back the attack even further?
4. Just imagine that Lucky Eddie gets to  $9\frac{7}{8}$ . What strategy can he use to further delay the attack?

➡ Check the original source on page 47

<sup>14</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Chris Browne's strip).



## When being number 2 is not such a big deal...<sup>15</sup>



1. Describe the situation depicted in the strip. Why is it funny?
2. Assuming that on that day the first customer served was number 0, how many people might have already been served?
3. If the numbering continues the way it is suggested on the screen, how many people will be served before reaching number 1? And number 2?

➔ Check the original source on page 47

<sup>15</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Ryan Kramer's strip).

# $\frac{86499328}{259497984}$ of mushrooms<sup>16</sup>



1. Describe the situation depicted in the strip. What was, in your opinion, the little boy's intention? Why is it funny?
2. What do you make of the use of fractions to order a pizza? What fractions do you use when you want to order different ingredients with your pizza?
3. How can we know if the three fractions mentioned are the equivalent of a whole pizza?

➡ Check the original source on page 48

<sup>16</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Bill Amend's strip).

## Fractions, what on Earth do I need you for?<sup>17</sup>

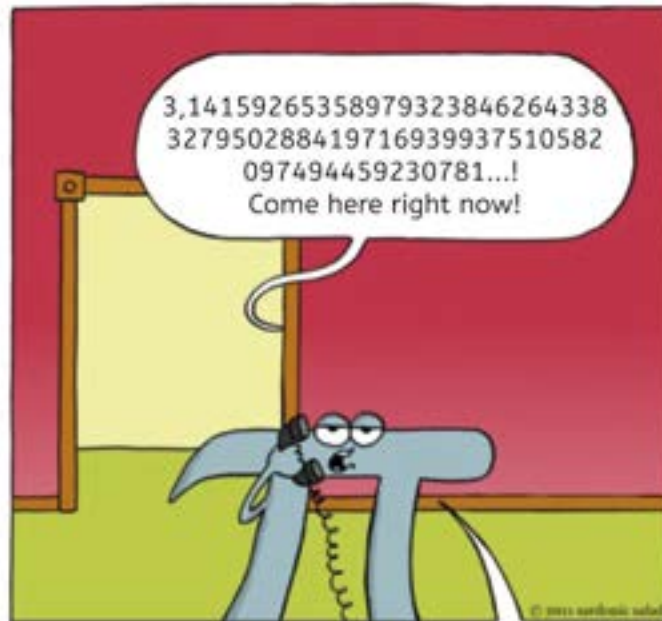


1. Observe the situation depicted. What do you make of the situation portrayed? Do you agree with the characters? Why is the situation funny?
2. In your everyday life, do you use fractions? If so, when do you use them?
3. Which part of the pizza has mozzarella and tuna on it? And which part has mozzarella and ham?
4. How would the pizza have been divided according to the parrot's suggestion?

➡ Check the original source on page 48

<sup>17</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a William Raphael Silva's strip).

## Full name, almost full name or incomplete name?<sup>18</sup>



I have to go. My mother only calls me by my full name when I'm in real trouble...

1. Describe the situation depicted in the cartoon. Why is it funny?
2. What number is mentioned in the picture? How can you define and classify that number?
3. Do you agree that his mother called him by his full name?

➡ Check the original source on page 49

<sup>18</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a cartoon uploaded to the Sardonio Salad Blog).

## To be part of the picture<sup>19</sup>



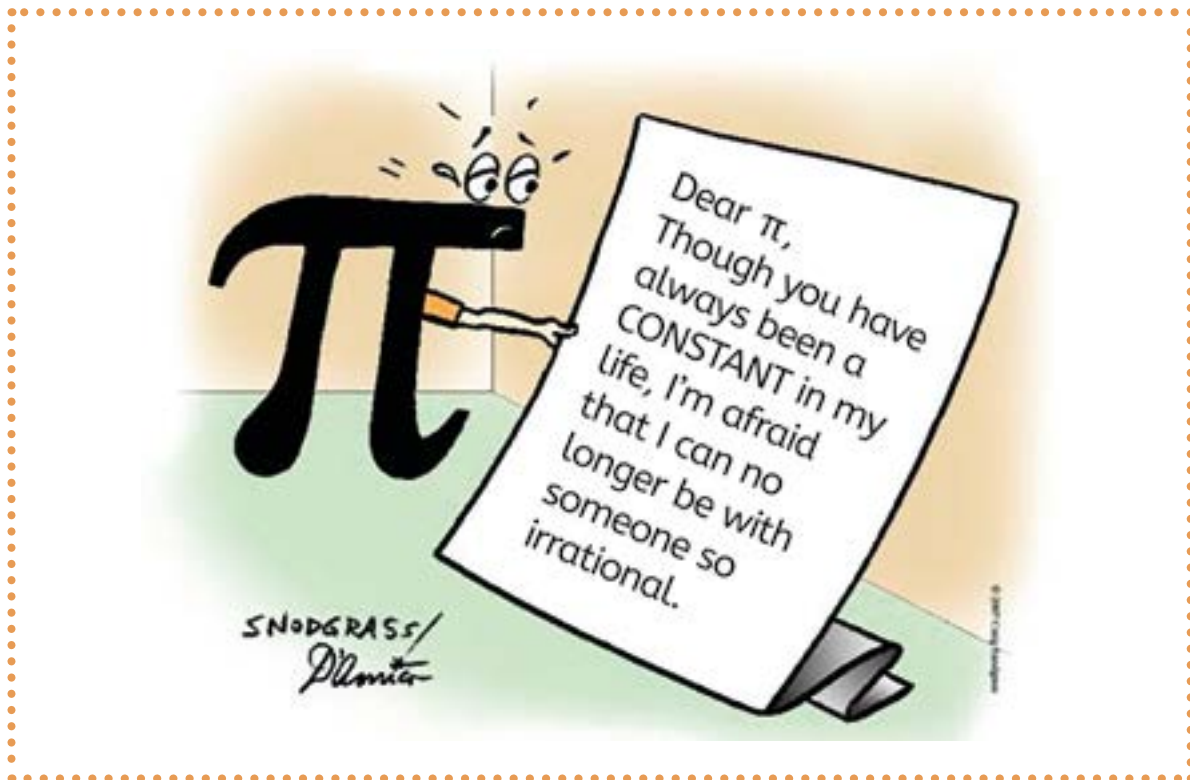
1. Describe the situation depicted in the cartoon. What makes it funny?

2. Why does 3 say “I don’t think I can fit everyone in”?

→ Check the original source on page 49

<sup>19</sup> This task is based on a cartoon by Mark Parisi, available at <https://www.pinterest.pt/pin/98445941843359127/>.

## That's what humour is all about!<sup>20</sup>



1. Describe the situation pictured. What's so funny about it?
2. Who could have written the letter? How can you justify  $\pi$ 's state of mind?
3. What do the words "constant" and "irrational" mean in the letter?
4. Do you find the situation amusing?

➡ Check the original source on page 50

<sup>20</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Craig Snodgrass's cartoon).

## Work, work and nothing but work...<sup>21</sup>



1. Describe the situation depicted in the strip. What makes it funny?
2. What do you think of the study plan offered? Is it a good plan? Why/why not?
3. What if the plan starts this way: "1 second in the first week and in the following week there would be a 50% increase compared to the previous week". Would it be very different?

➔ Check the original source on page 50

<sup>21</sup> This task is based on a cartoon by Bill Amend, available at <https://www.chegg.com/homework-help/questions-and-answers/foxtrot-bill-amend-math-teacher-offers-assign-one-second-homework-first-week-school-two-se-q33605988>.

## The best years of Garfield's life<sup>22</sup>



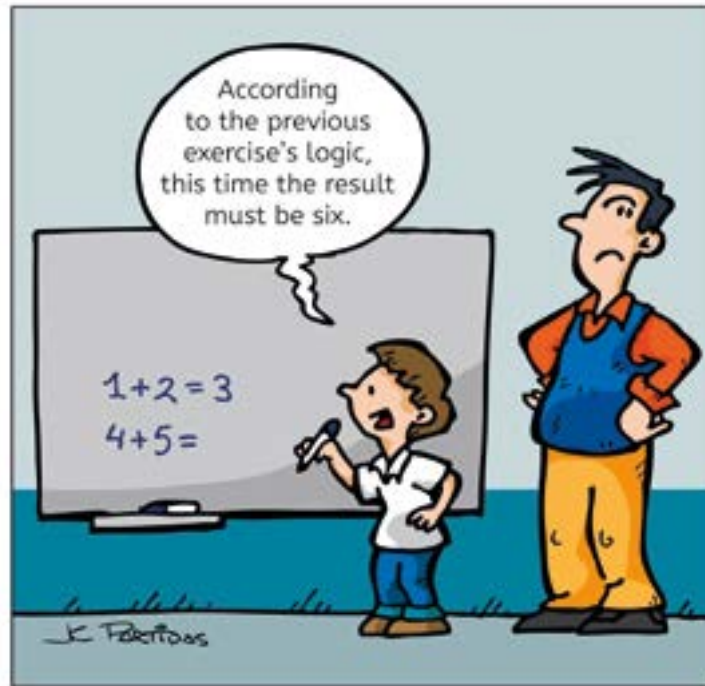
1. Describe the situation depicted in the strip. What makes it funny?
2. What does it mean when his owner says that Garfield sleeps an average of 18 hours a day?
3. Would the result be the same if we take into account all the hours he had slept through his whole life?
4. How old is Garfield in this situation?

➡ Check the original source on page 51

<sup>22</sup> Comic strip by Jim Davis, available at <https://www.mmo.to/garfield.php?week=866412000>.



## Irregular regularity<sup>23</sup>



1. Describe the situation depicted in the strip. What makes it funny?
2. Why did the pupil answer “six”?
3. Find regularities in additions of regular numbers and justify them.

➔ Check the original source on page 51

<sup>23</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Juan Carlos Partidas's cartoon).

## Right or wrong?<sup>24</sup>



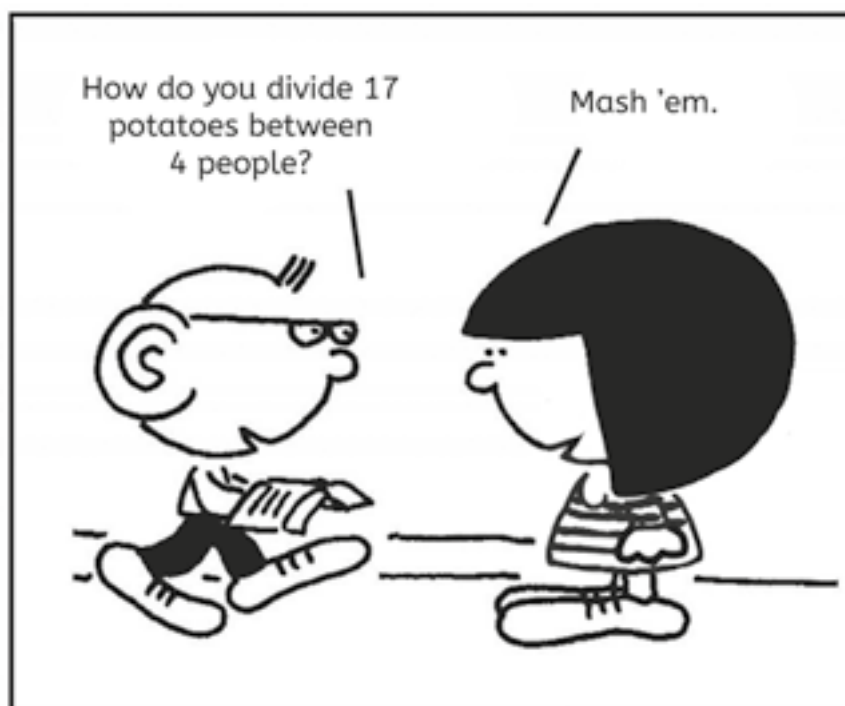
"What do you mean, it's the wrong kind of right?"

1. Describe the situation pictured. What makes it funny?
2. Is there any "truth" about the situation depicted? Why/why not?
3. How could we correct the result of the operation without removing a single number?

➡ Check the original source on page 52

<sup>24</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a cartoon by Randy Glasbergen).

## Potatoes!<sup>25</sup>



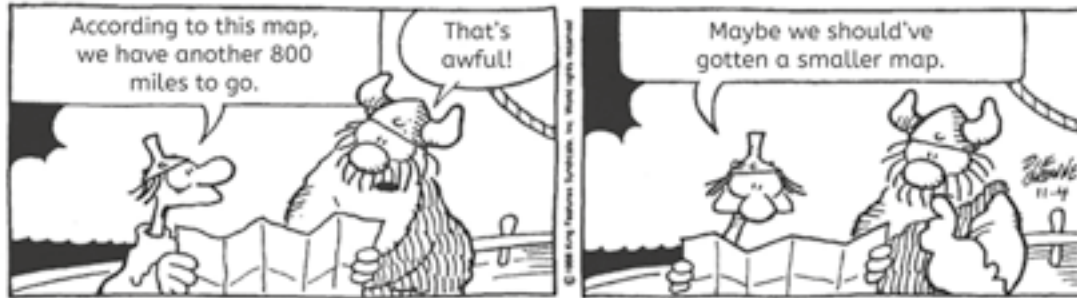
1. Describe the situation depicted. What is so funny about it?
2. What do you make of the solution found to split the potatoes? How will the potatoes be equally shared?
3. If we chose not to mash the potatoes, how would such division be successfully achieved?

➔ Check the original source on page 52

<sup>25</sup> This task is based on a cartoon available at <https://www.pinterest.pt/pin/129408189269821231/>.

## A smaller map<sup>26</sup>

### Hagar the Horrible by Dik Browne



Hagar the Horrible, by Dik Browne, 11/4/98. © King Features Syndicate. Used with permission. All Rights Reserved.

1. What do you make of Lucky Eddie's idea of using a smaller map? Why? Why is this situation funny?
2. How did Lucky Eddie find out, just by looking at the map, that they still had to travel another 800 miles to reach their destination?
3. If Lucky Eddie had managed a smaller rectangular map of the same region that would only include one fourth of the original map, what kind of relationship would exist between the distances covered to reach the locations in both maps? What would the relationship between the scales of both maps be?

➡ Check the original source on page 53

<sup>26</sup> Task available in the book *Humor no ensino da Matemática, tarefas para a sala de aula* (based on a Dik Browne's strip).

## A new record!<sup>27</sup>

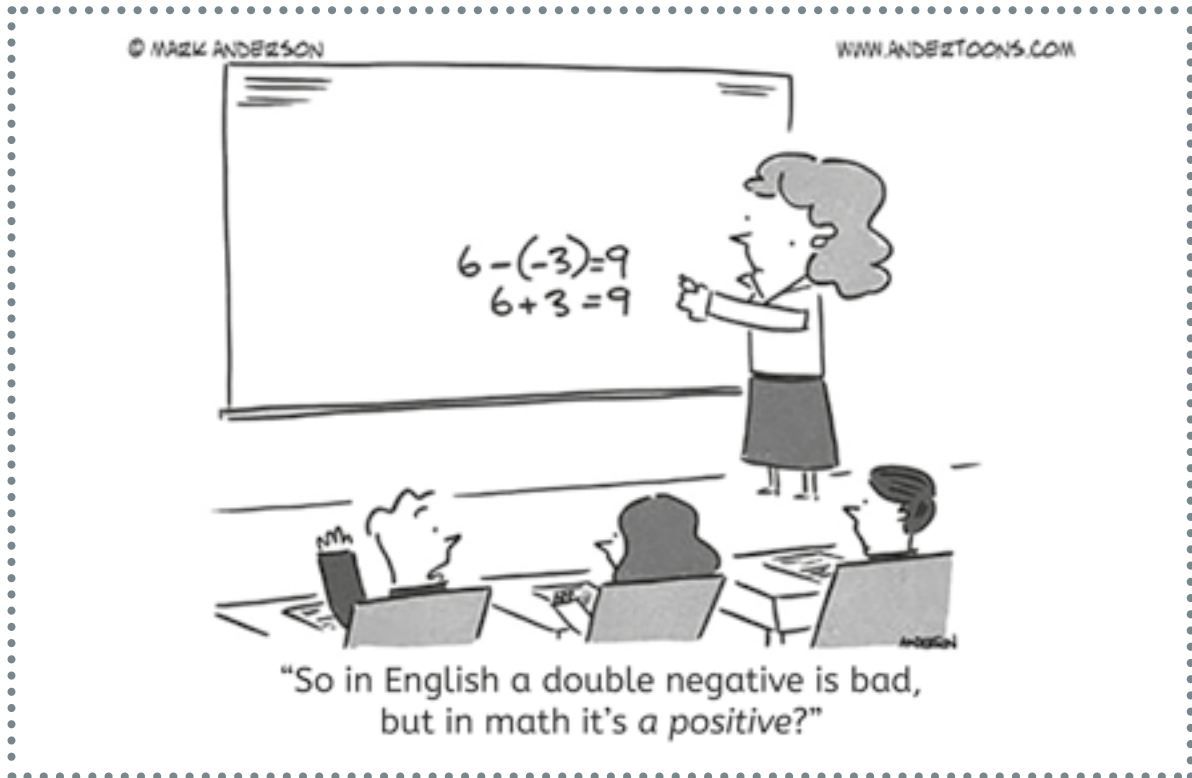


1. Describe the situation pictured. Why is it funny?
2. Assuming that they had spent 35€, what distance would they have covered?
3. What kind of magnitudes are the characters associating? Why are they doing so?
4. In the current lockdown situation, we do our shopping once a week. Find out what's really happening in your own house to discover at what rate you are currently shopping and what the rate was prior to lockdown.

➡ Check the original source on page 53

<sup>27</sup> This task is based on a cartoon by Bob Thaves, starring his characters Frank & Ernest, available at <http://www.frankandernest.com/>.

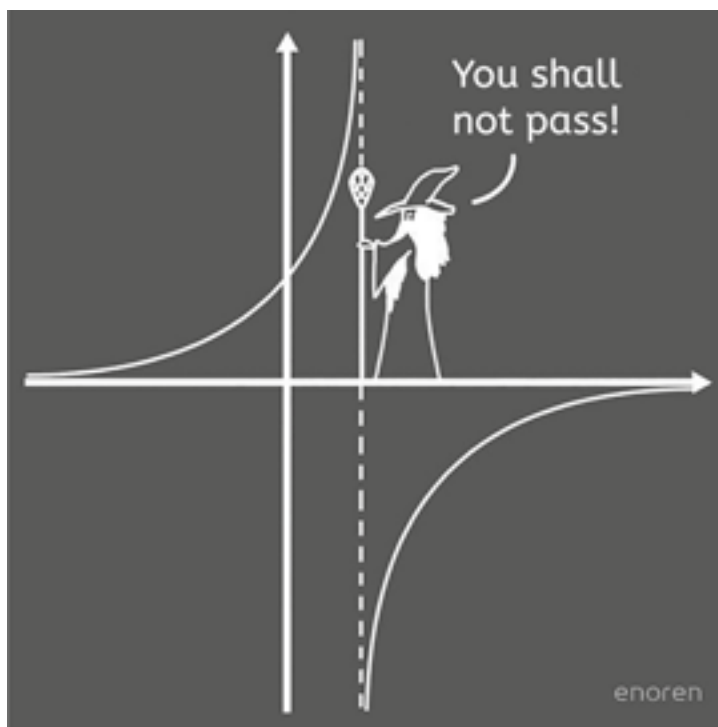
## There is negative and negative...<sup>28</sup>



1. Describe the situation depicted in the cartoon. What makes it amusing?
2. Is the character right? Explain.

➡ Check the original source on page 54

## Thou shalt not pass!<sup>29</sup>



1. Describe the situation pictured in the strip. Why is it funny?
2. What's depicted in the picture? The straight line shall not pass. Why not?

➔ Check the original source on page 54

<sup>29</sup> This task is based on a cartoon available at <https://www.pinterest.co.uk/pin/275141858458887227/>.





## References

Flores, P. (2003). *Humor gráfico en el aula de Matemáticas*. Granada: Arial.

Flores, P., & Moreno, A. J. (2011). *Matemáticamente competentes para reír*. Barcelona: Graó.

Menezes, L., Gomes, H., Ribeiro, A., Martins, A. P., Flores, P., Viseu, F., Oliveira, A., Matos, I. A., Balula, J. P., & Delplancq, V. (2017). *Humor no ensino da Matemática: Tarefas para a sala de aula*. Viseu: ESE -IPV.

National Council of Teachers of Mathematics (NCTM) (2007). *Cartoon corner: Humor-based mathematics activities* (Edited by A. Reeves). Reston, VA: National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics (NCTM) (2013). *Cartoon corner 2: Humor-based mathematics activities* (Edited by P. House). Reston, VA: National Council of Teachers of Mathematics.



## Appendix

Next, we reproduce, in order of appearance, the comic strips and cartoons used in the mathematical tasks the way they were consulted. We would like to thank each of the authors for allowing us to use their work in order to create humorous mathematical tasks for the classroom.

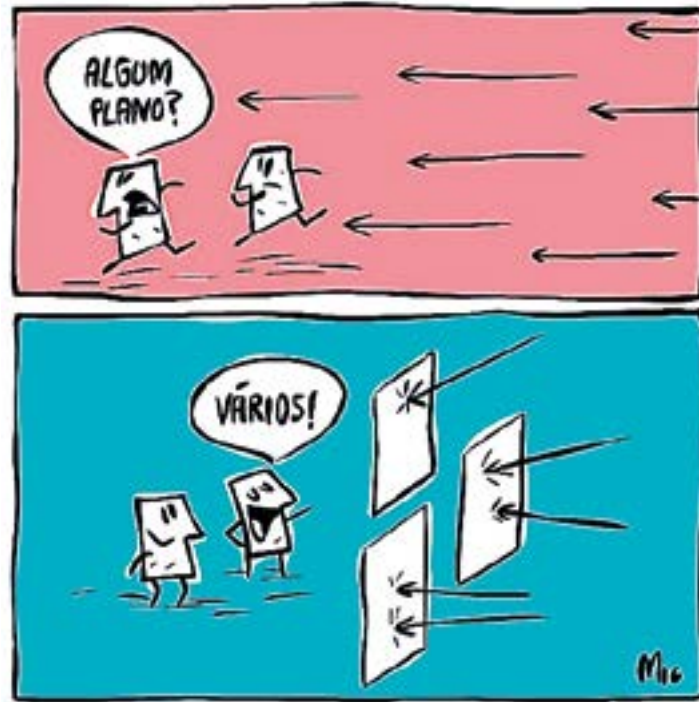




FOXTROT

BY BILL AMEND

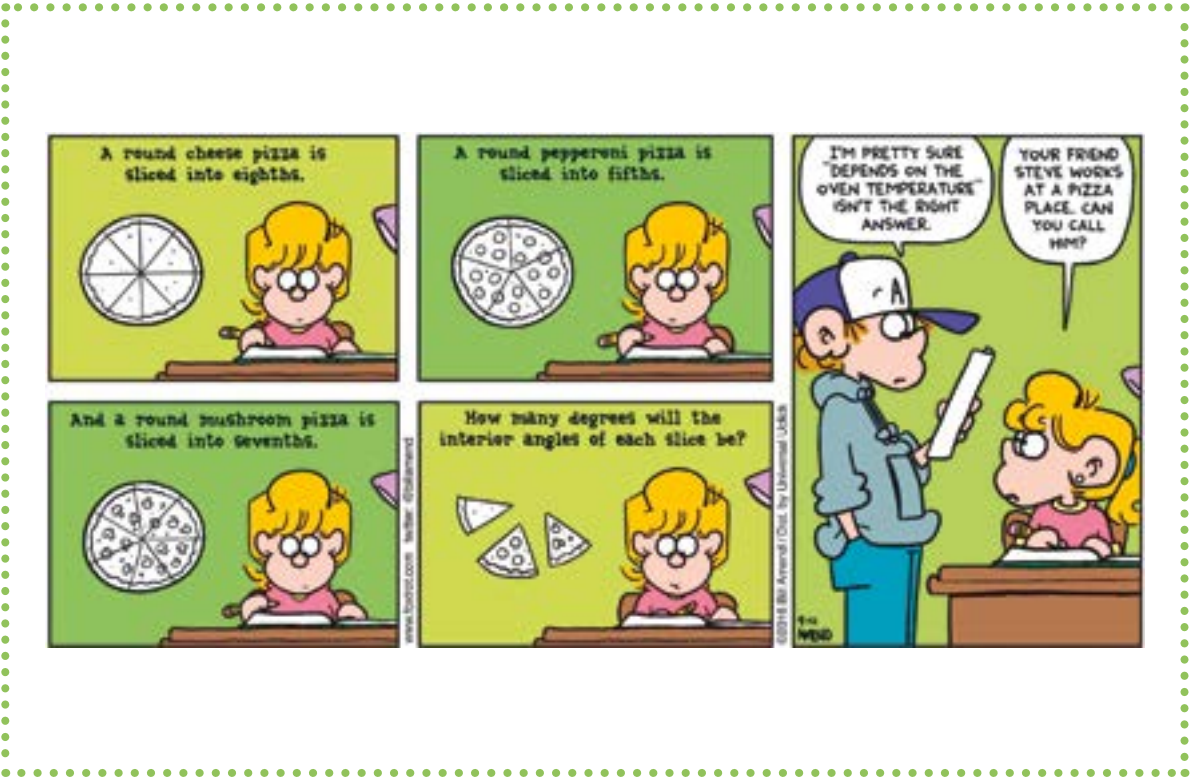


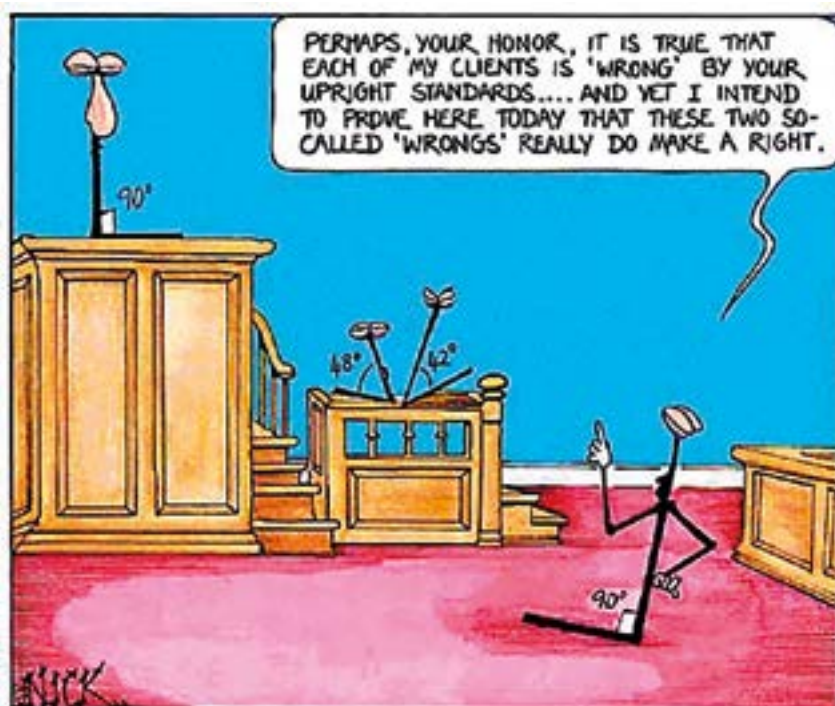


### Clear construction agreements are important









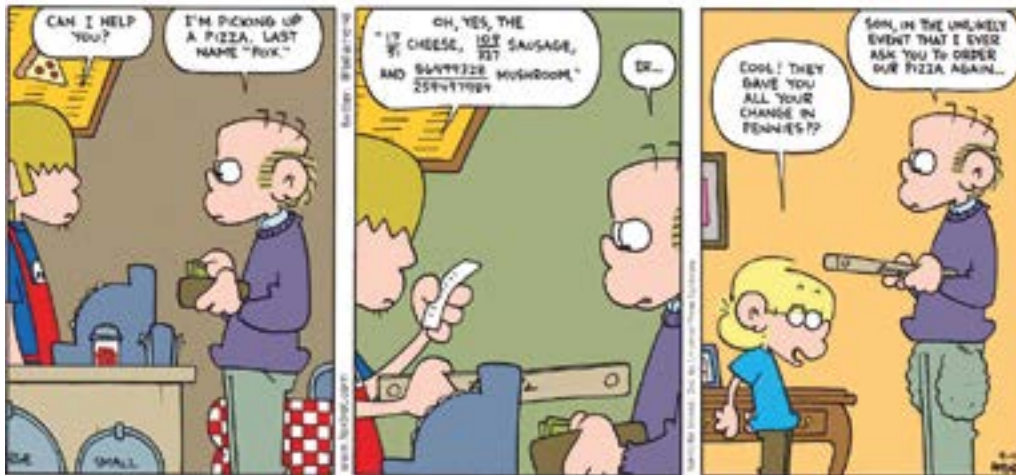
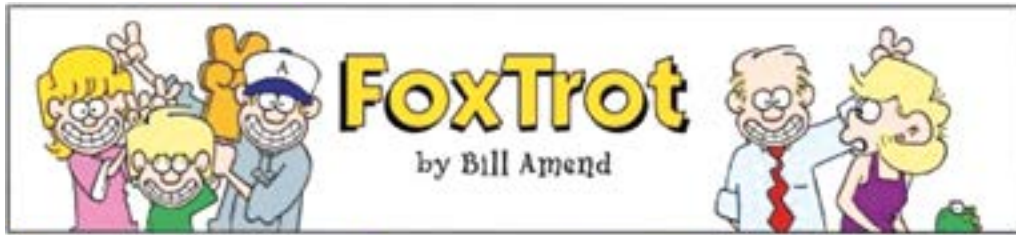




Hagar, the Horrible, Chris Browne



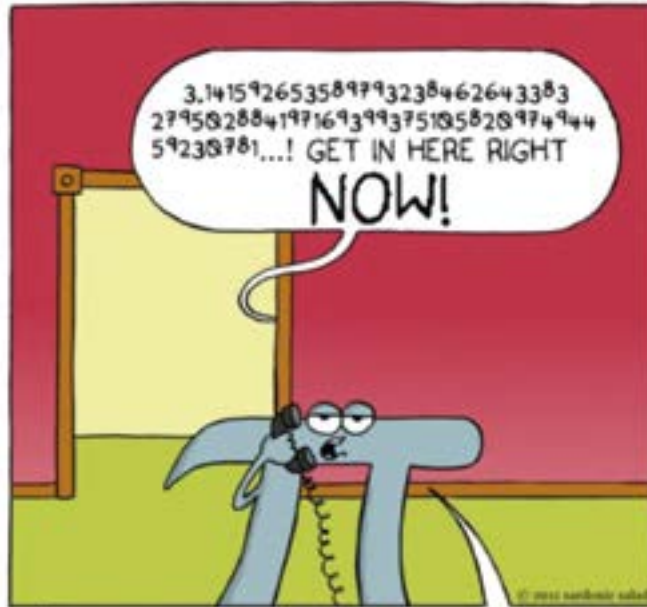
Humour-Lan Ryan Krause



# In - Fração

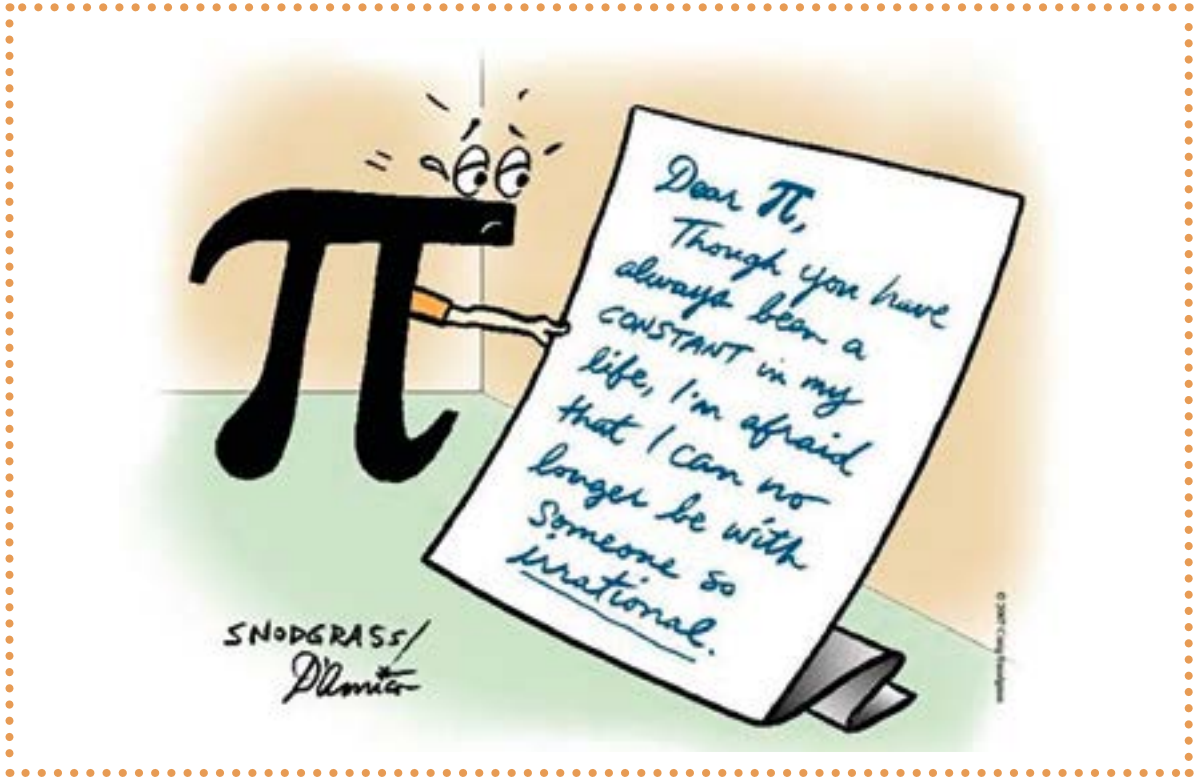
POR WILLIAN RAPHAEL SILVA E CAROL BÖCK

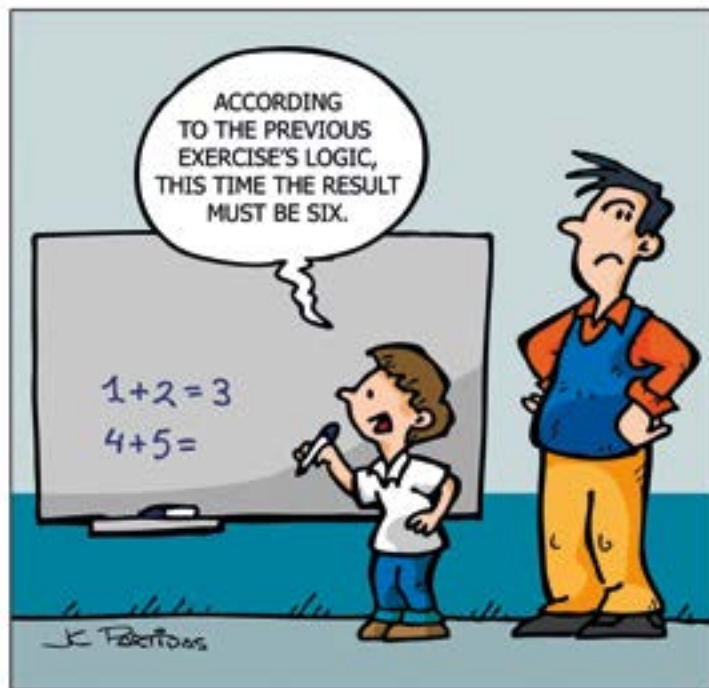




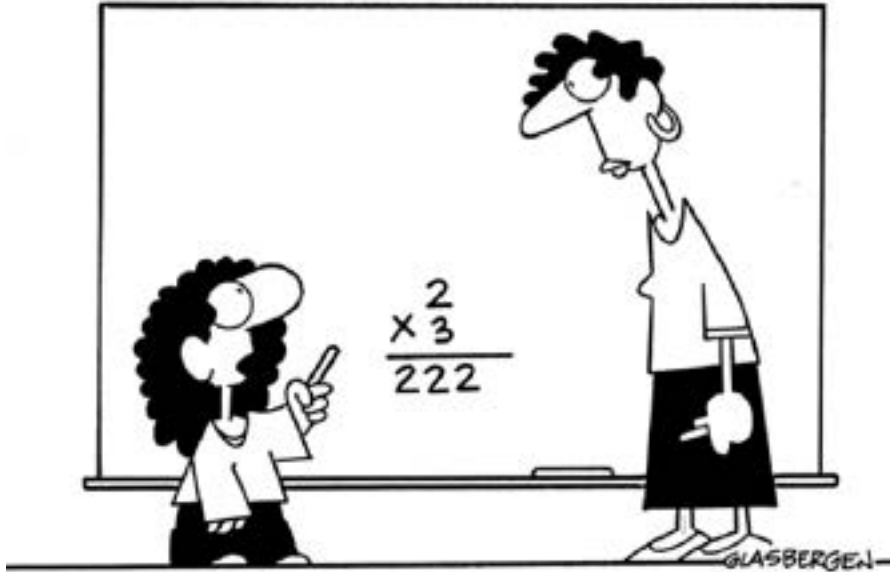
I'VE GOT TO GO. MY MOM ONLY USES MY FULL NAME WHEN I'M IN BIG TROUBLE.







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"What do you mean, it's the wrong kind of right?"



**Hagar the Horrible** by Dik Browne

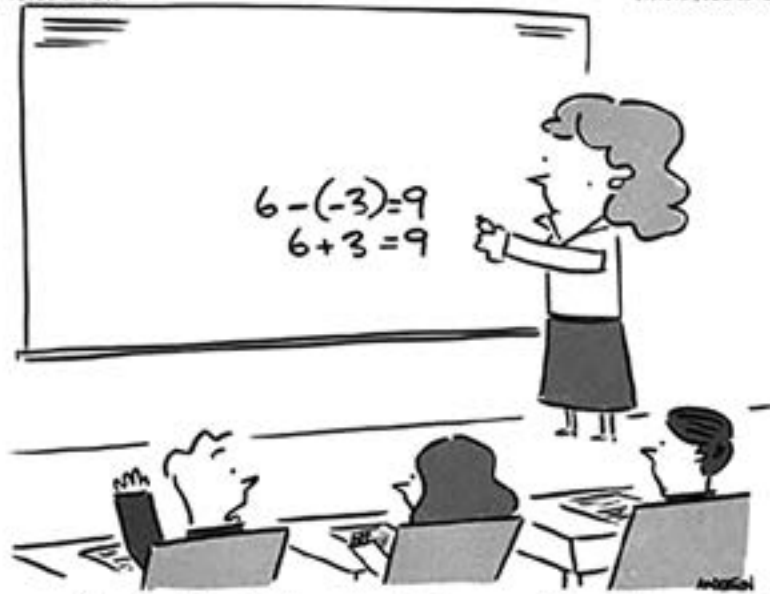


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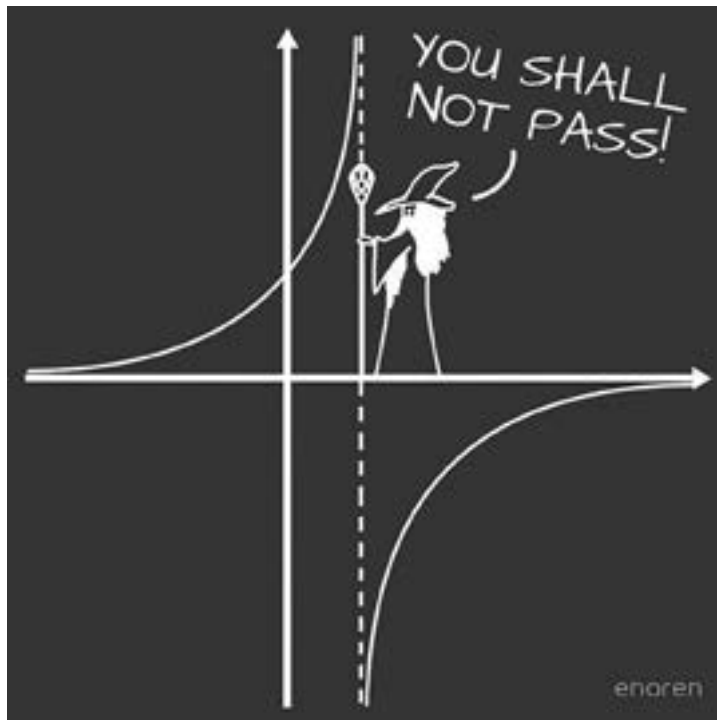


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"So in English a double negative is bad,  
but in math it's a *positive*?"





**Humour**  
to learn  
**Mathematics**





