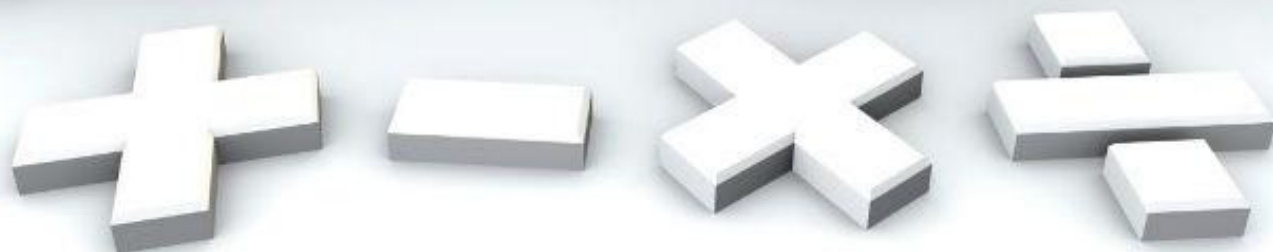


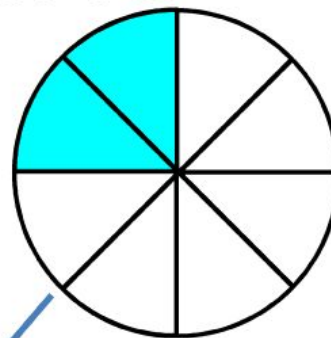
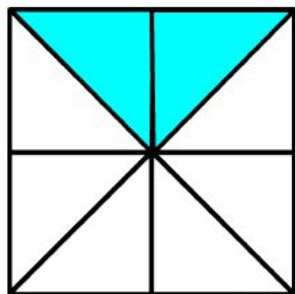
Math



Why did or didn't you like  
Math at school?

What's the difference  
between a fraction and a  
decimal?

# Two-eighths



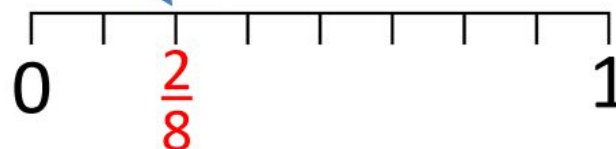
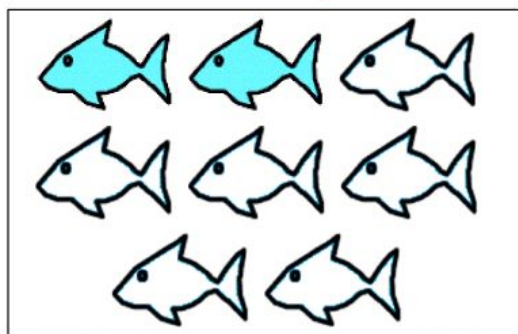
$$\frac{2}{8}$$

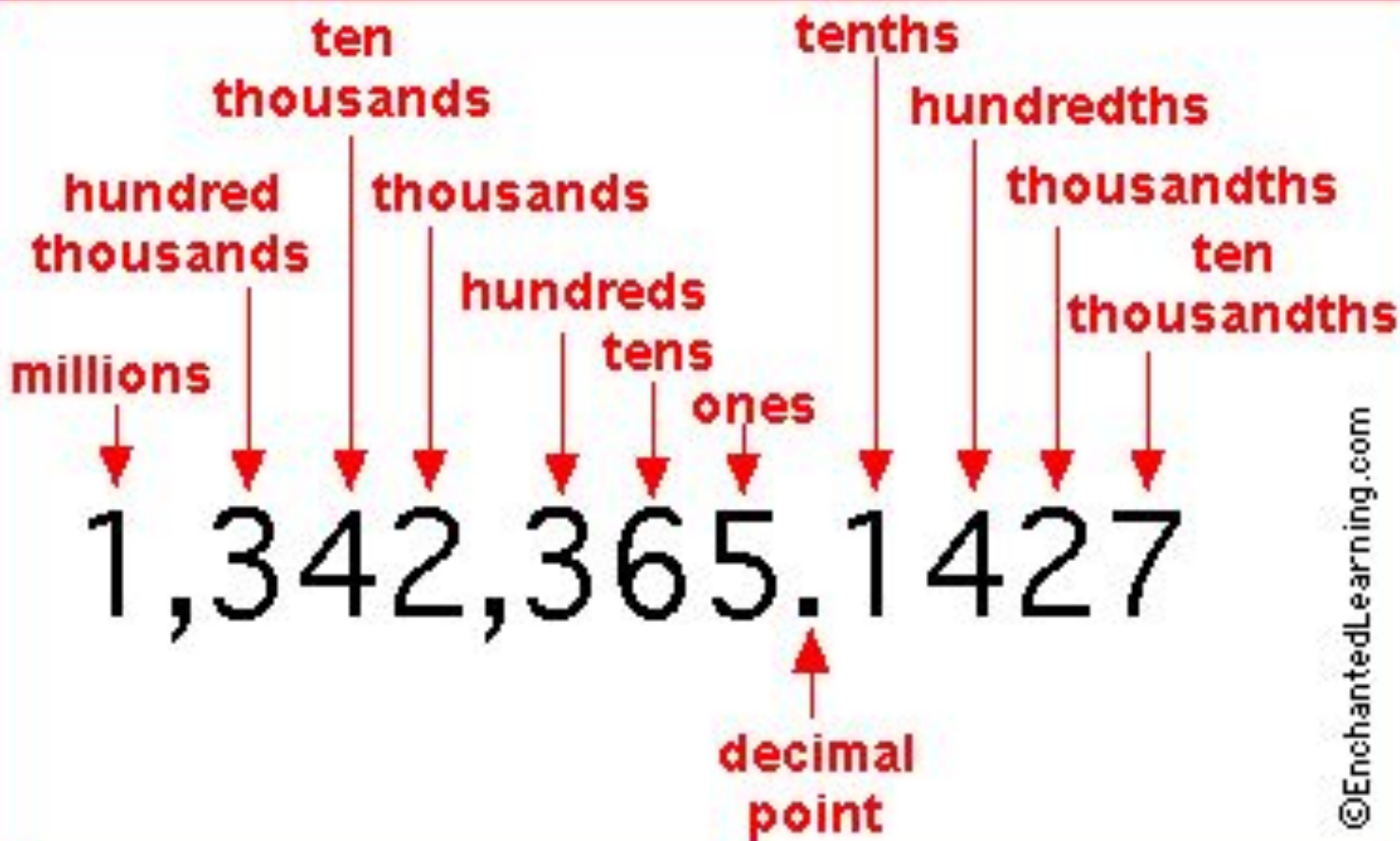
0.25

DECIMAL

25%

PERCENT





Are girls or boys better at  
Math?

Do you think Math is a  
waste of time now, with  
all the computers  
around?

Why do people call Math  
a language? What  
features of a language  
does it have?



Why is mental arithmetic  
important? Where do we  
use it?



How can you improve  
mental arithmetic? Have  
you learned a times table  
at school?

Times Table - 12x12

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>1</b>	<b>1</b>	2	3	4	5	6	7	8	9	10	11	12
<b>2</b>	2	<b>4</b>	6	8	10	12	14	16	18	20	22	24
<b>3</b>	3	6	<b>9</b>	12	15	18	21	24	27	30	33	36
<b>4</b>	4	8	12	<b>16</b>	20	24	28	32	36	40	44	48
<b>5</b>	5	10	15	20	<b>25</b>	30	35	40	45	50	55	60
<b>6</b>	6	12	18	24	30	<b>36</b>	42	48	54	60	66	72
<b>7</b>	7	14	21	28	35	42	<b>49</b>	56	63	70	77	84
<b>8</b>	8	16	24	32	40	48	56	<b>64</b>	72	80	88	96
<b>9</b>	9	18	27	36	45	54	63	72	<b>81</b>	90	99	108
<b>10</b>	10	20	30	40	50	60	70	80	90	<b>100</b>	110	120
<b>11</b>	11	22	33	44	55	66	77	88	99	110	<b>121</b>	132
<b>12</b>	12	24	36	48	60	72	84	96	108	120	132	<b>144</b>

Are there times when two  
plus two equals five?

What happens if you  
don't round these  
numbers?

$$2.25 + 2.26 = ?$$





# CHAOS THEORY

In Jurassic Park (1993) a chaos theorist  
Ian Malcolm explains the gist of it:





# Butterfly Effect



Flap of a butterfly's wing in Brazil can set off a cascade of atmospheric events that, weeks later, spurs the formation of a tornado in Texas

Source: [https://en.wikipedia.org/wiki/The\\_Lorenz\\_attractor](https://en.wikipedia.org/wiki/The_Lorenz_attractor), yb.org

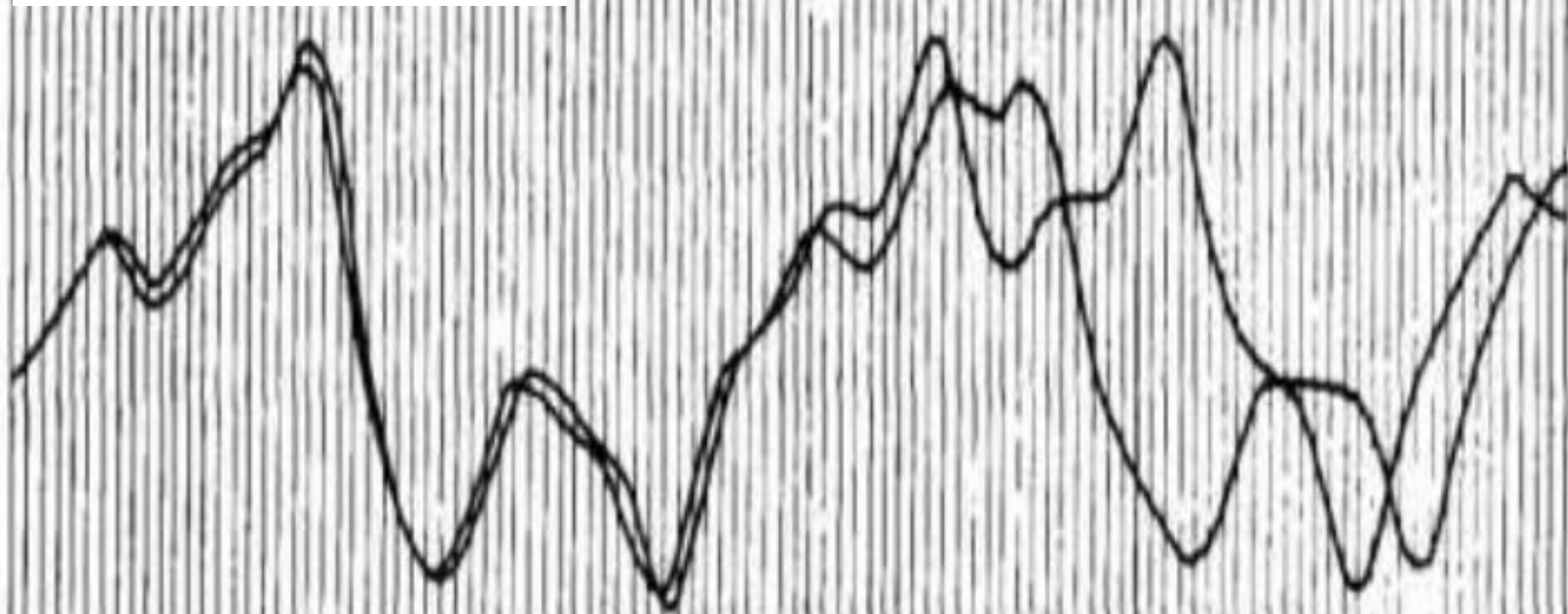




# Edward Lorenz

The Butterfly Man

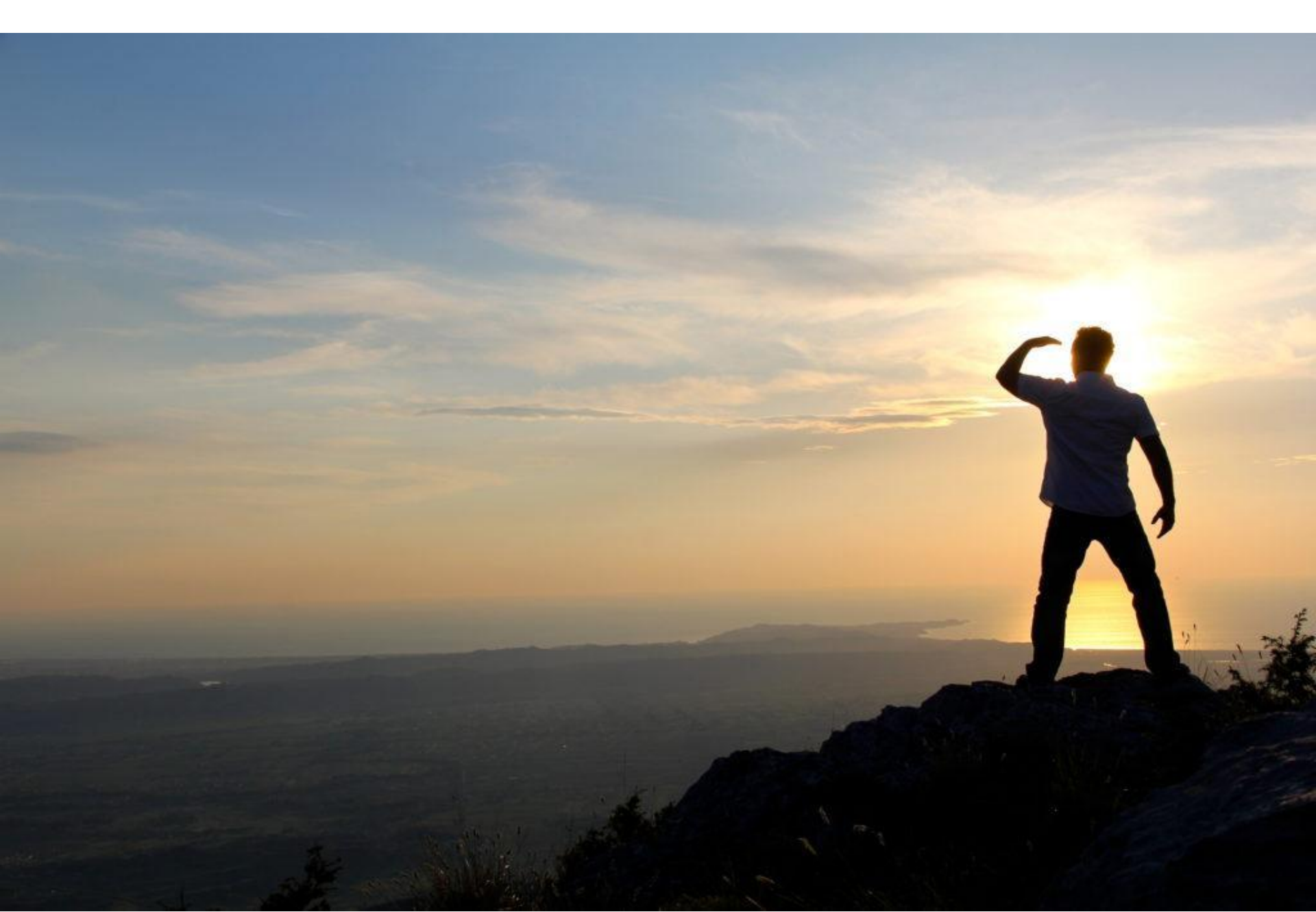
$0.506127 \rightarrow 0.506$



# Prediction Horizon

- a length of time beyond which we can no longer accurately forecast something.

What can affect the  
Prediction Horizon?



Up until 2008 most  
computers were using the  
**IEEE 754-1985**  
calculation standard

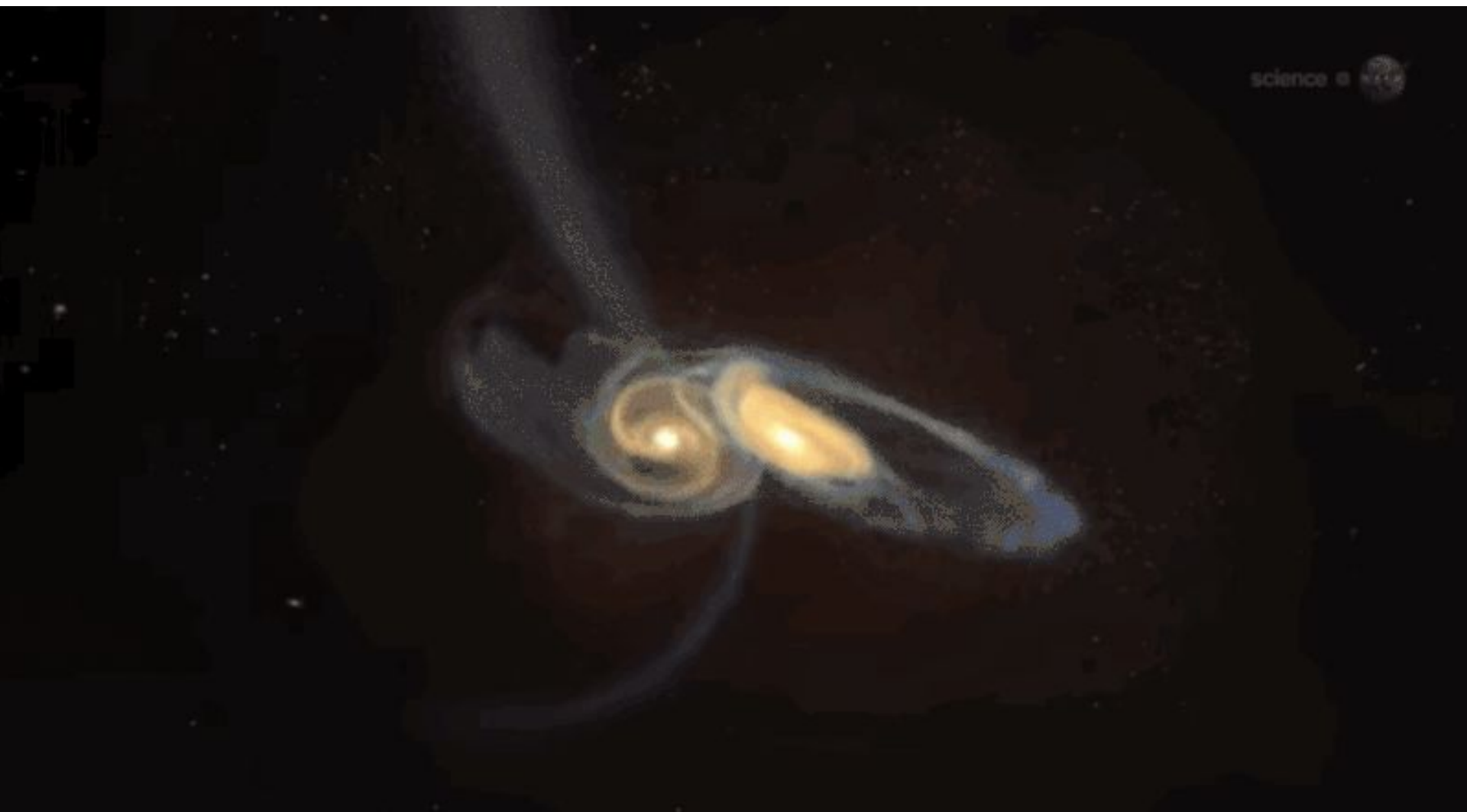
IEEE 754-1985 could work  
with 16 decimals

Current 754-2008 generally  
handles up to 32 decimals









How is it possible to  
calculate the  
probabilities?

Why do we need to  
calculate them?

# Quantum computers

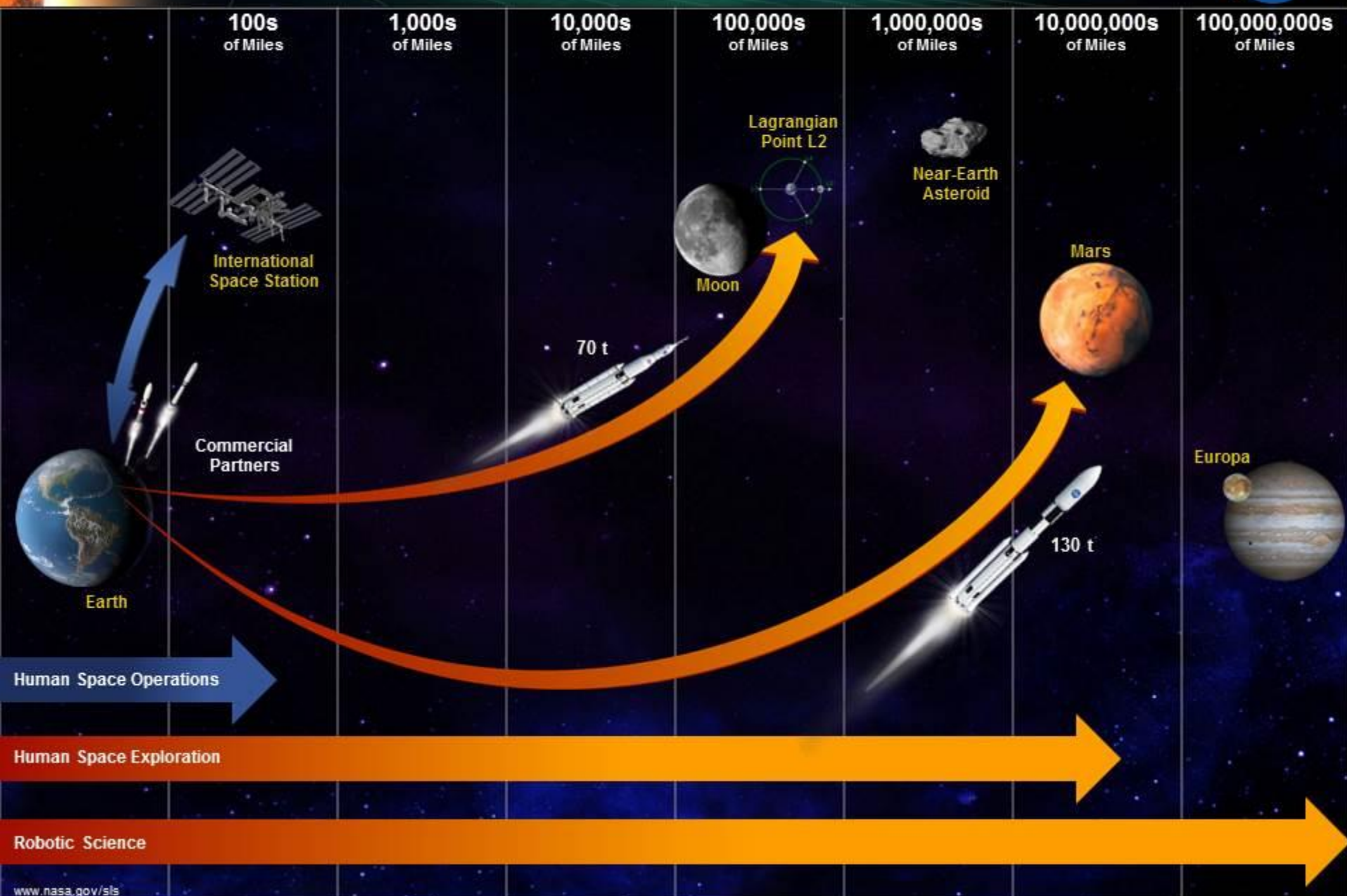


Created from probability  
particles called qu-bits,  
quantum computers aim  
at computing  
probabilities, which linear  
computers can't  
calculate.

# Weather



# The Future of Exploration





# Banking





# Purchase Behavior





Control Horizon is the length of time which we need to beneficially alter the predicted future

# What is Alertness?







Do you often think about  
what to do if things don't  
go as planned?