Defining Artificial Intelligence

What does **intelligence** mean?

Take a moment and try to come up with a definition with your partner

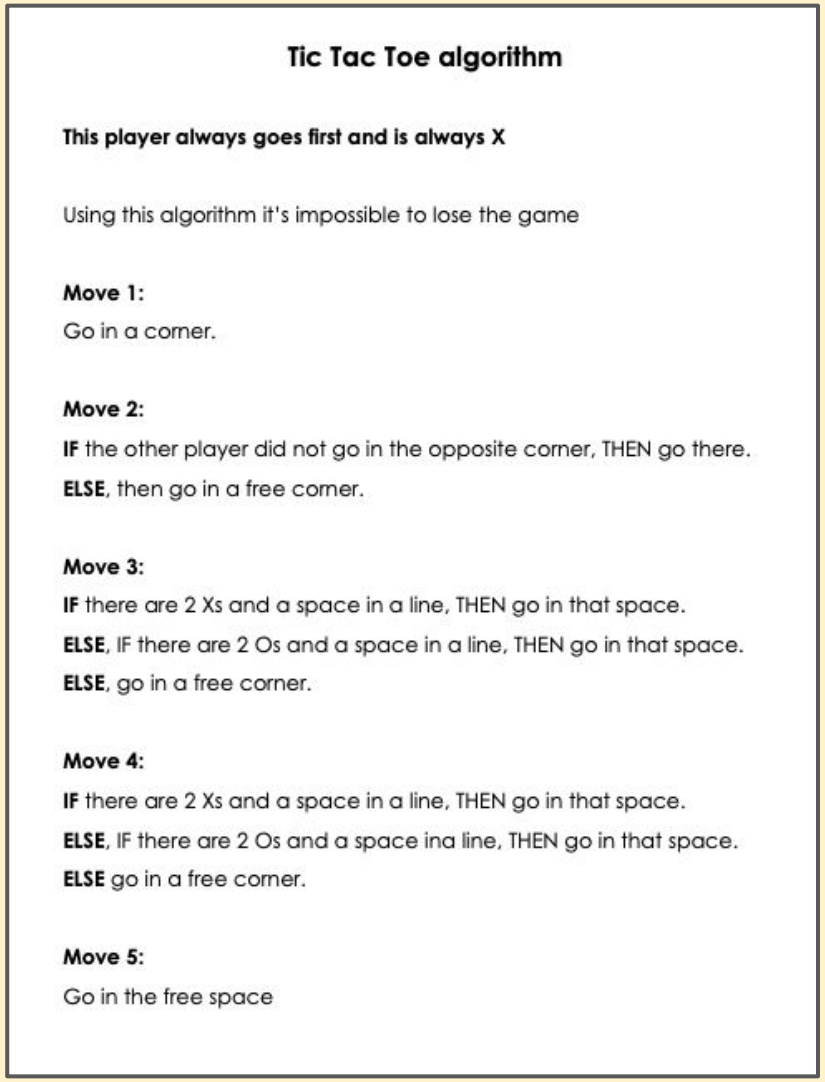
Write your attempt in your booklet

Defining Artificial Intelligence

Earlier this year you used this **algorithm** to play tic tac toe

The algorithm never loses

Does this make the algorithm intelligent?



Tic Tac Toe algorithm

This player always goes first and is always X

Using this algorithm it's impossible to lose the game

Move 1:
Go in a corner.

Move 2:
IF the other player did not go in the opposite corner, THEN go there.
ELSE, then go in a free corner.

Move 3:
IF there are 2 Xs and a space in a line, THEN go in that space.
ELSE, IF there are 2 Os and a space in a line, THEN go in that space.
ELSE, go in a free corner.

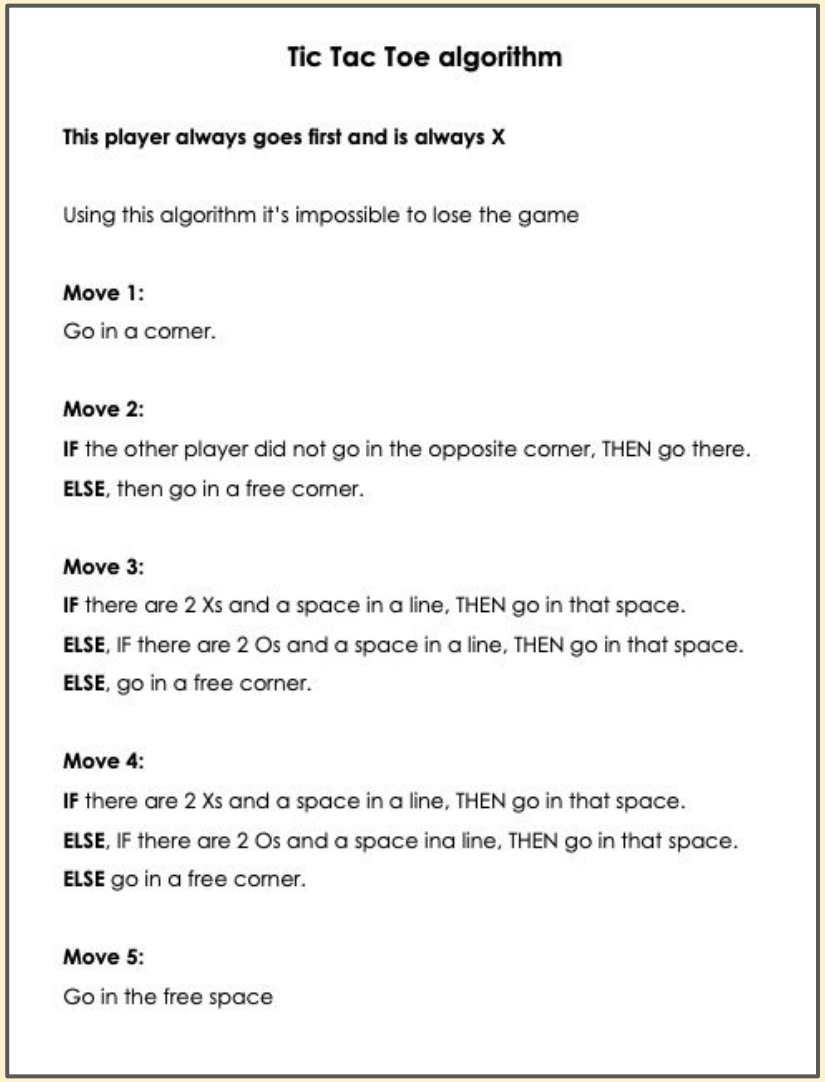
Move 4:
IF there are 2 Xs and a space in a line, THEN go in that space.
ELSE, IF there are 2 Os and a space ina line, THEN go in that space.
ELSE go in a free corner.

Move 5:
Go in the free space

Defining Artificial Intelligence

The algorithm isn't intelligent. It's just a set of rules to follow to complete a task

If a new situation was introduced (say a third player) the algorithm couldn't **adapt** to that



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Defining Artificial Intelligence

Any algorithm is an example of a **rules-based approach** to solving a problem

Computers use **algorithms** all the time to do all sorts of things

They can follow the **rules**, making **decisions** as they go. But they can't **adapt** to anything outside the rules that they know

Answer questions 2, 3, and 4 in your booklet

Defining Artificial Intelligence

Artificial Intelligence is when computers are able to do things (perform tasks) usually involving human intelligence

Tasks could include learning, reasoning, problem solving, and decision making

AI is when computers can adapt their algorithms based on having learnt from using data. This allows them to make decisions or predictions

Defining Artificial Intelligence

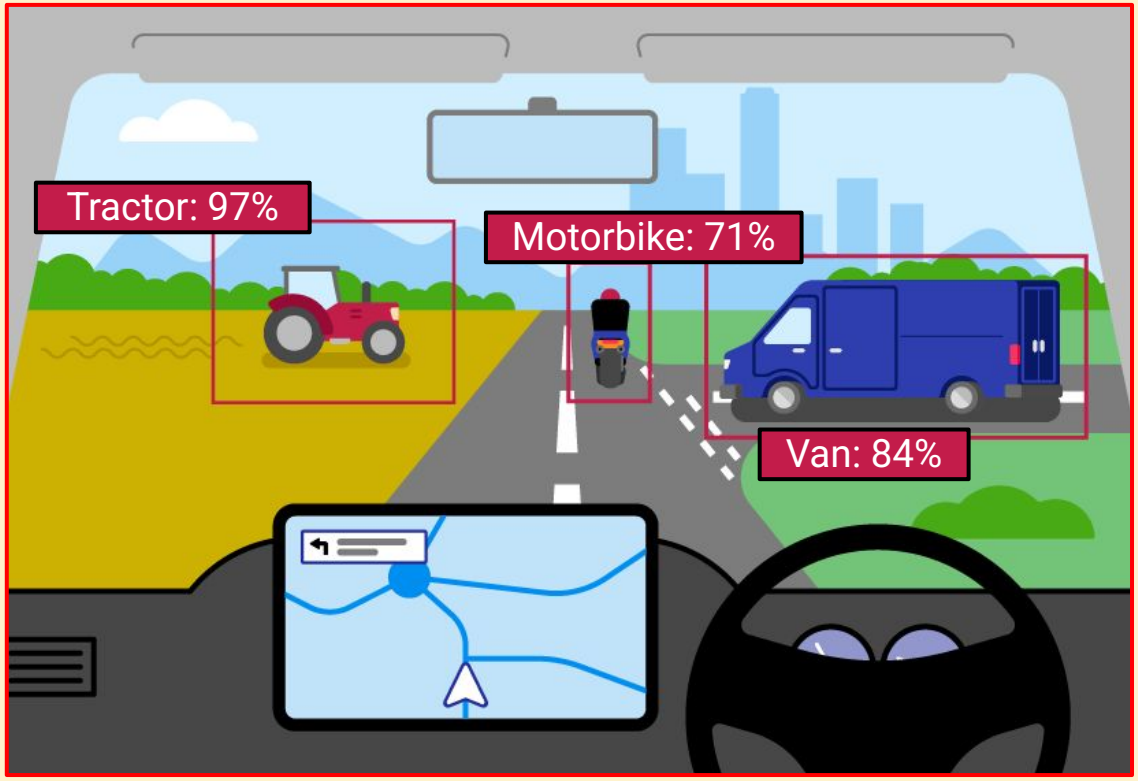
Examples of uses of AI include advanced web search engines, self-driving vehicles, chatbots or virtual assistants, and machines that can play strategy games

The first research in to AI started in 1956

It’s been used to solve problems since the 1960s, but the wide use of AI only really began in the 2020s

Defining Artificial Intelligence

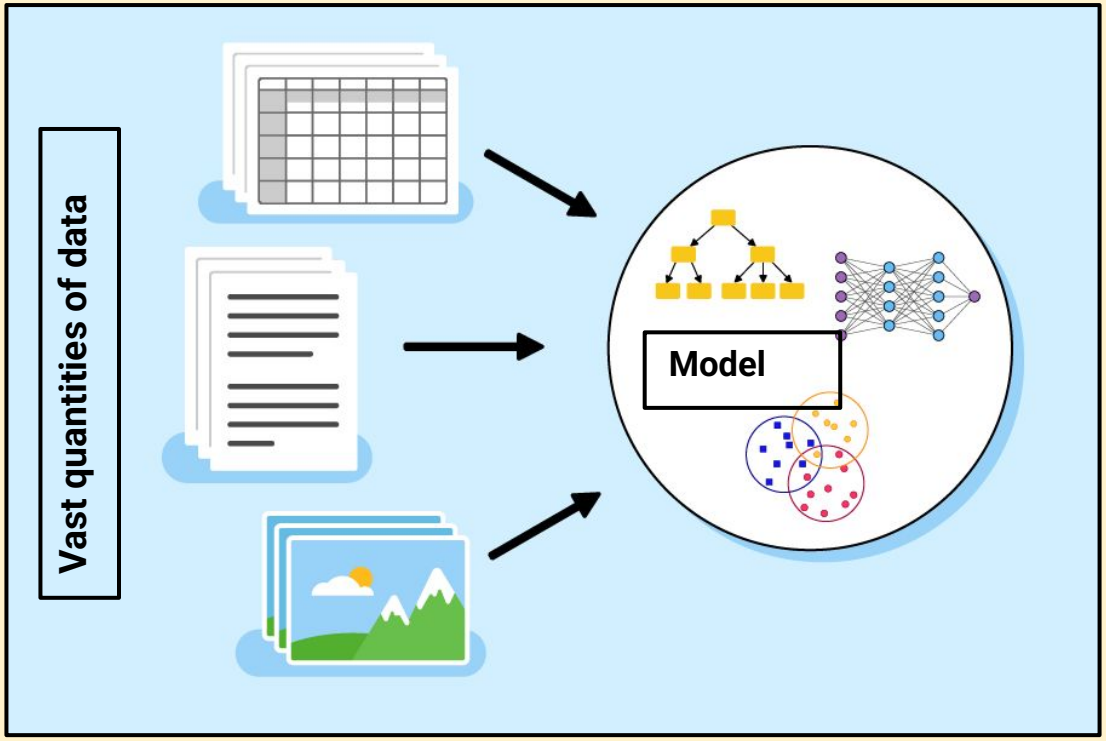
Self-driving vehicles have to adapt to changes in the environment around them



What do you think the percentages on the image show?

Defining Artificial Intelligence

AI systems rely on analysing data to create a model for the system to use. The model can make predictions



Answer questions 5 and 6 in your booklet

Defining Artificial Intelligence

The 2020s have seen the growth of what is called **Generative AI** (sometimes called Gen AI)

Generative AI can be used to generate (create) data such as text, images, video, audio, and software code

This is one of the fastest growing types of AI use

Defining Artificial Intelligence

Generative AI works by the AI system being "trained" on examples of the thing it is designed to produce

For example, a Gen AI model works through lots and lots of examples of books about cookery. Once it has the data from these, it should be able to be used to create its own product – perhaps recipes or images of food, or videos of food being prepared

Defining Artificial Intelligence

Examples of **Generative AI** systems include “chatbots” such as ChatGPT, Claude, Copilot, and Google Gemini

Other examples can be used to produce images or video when the user enters a text description of what they want the system to make

Defining Artificial Intelligence

Chatbots are based on **Large Language Models** (LLMs)

By looking at lots of written sources, LLMs are able to create text in a way similar to the text that a human might write

Online translation tools generally use LLMs

Now answer question 7 in your booklet

For question 8 use the Using AI Summaries slides