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Question A

For a 4-variable K-Map, why are the rows and columns arranged in the order: 00, 01, 11, 10?

```
This order is based on the binary representation of each of the 4 combinations. For a K-Map with 4
    variables, the binary combination of the variables would look something like this: (00, 01, 10,
     11). The binary order (from left to right and top to bottom) ensures that the combinations can
     be easily read off the map.
```

Question B

How do you assign values to dont care X in K-Maps when doing simplification?

```
When using K-maps for logic simplification, don't care values (usually represented by an 'X' in the
     K-map) can be assigned either a 0 or 1 value (or left as a don't care). It usually doesn't
    matter which value the don't care is assigned because the resulting equations will be the same.
     So in a situation when it is necessary to assign a 0 or 1 to a don't care value, it can be
    done at random.
```

Question C

Can you circle a rectangle of 2x3 cells in a K-Map, why or why not?

```
No, it is not possible to circle a rectangle of 2x3 cells in a K-Map because there are generally
    only four cells to be included in each K-Map. Furthermore, rectangular or other shapes are not
    able to be formed inside of these four cells.
```

Question D

What does 2x4 decoder do?

```
A 2x4 decoder is a digital logic circuit that takes two binary inputs and produces four output
    signals. It is used to convert a binary coded information into a form that can be used to drive
     various types of output devices such as light bulbs, motors, relays, etc. A 2x4 decoder is
    used in applications such as controlling electric door locks, automated teller machines, and
    encoding digital images.
```

Question E

What is seven-segment display?

```
A seven-segment display is an electronic device consisting of seven light-emitting diodes (LEDs) or
     LCD (liquid crystal display) elements, arranged in a rectangular shape to display numerical or
     alphabetical information. These displays are widely used in digital clocks, calculators, and
    other electronic devices.
```

Execution Time

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0:00:21.138728
```

OpenAI Parameters

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Model: text-davinci-003, Max. Tokens: 1024, Temperature: 1, N: 1
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