Question 1:

Which types of data are stored on a computer using bits?

1. Whole numbers
2. Fractional numbers
3. Text files

Question 2:

Nuru writes this code to calculate the final cost of an item with a discount applied:

price ← 0.7

discount ← 0.2

final ← price - discount

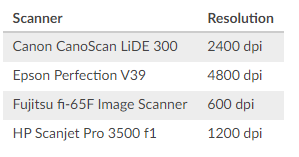
They're surprised to see that final stores the value 0.49999999999999994 instead of 0.5.

What is the best explanation for that result?

Question 3:

A scanner is a device that can scan a piece of paper and encode it into a digital form. The resolution of a scanner measures the number of dots per inch (dpi) that it captures.

This table lists the resolutions of various scanners:



Which of the following comparisons between scanners is the most likely to be true?

1. The Canon scanner may miss some details of a scanned document that the HP scanner captures.
2. The HP scanner may capture some detail of a scanned document that the Fujitsu scanner misses.
3. The Fujitsu scanner may capture some detail of a scanned document that the Epson scanner misses.
4. The Epson scanner may miss some details of a scanned document that the Canon scanner captures.

Question 4:

VSCII a character encoding scheme developed in the 1990s in order to encode text written in Vietnamese. VSCII uses one byte to encode each character.

This binary data is a VSCII encoding of a single Vietnamese word:

**1010111010111**

How many characters are encoded in that binary data?

Question 5:

A programmer is writing a software application about birds that will use a variety of data sources. They want to understand which data sources are analog so that they can think carefully about the process of converting the analog data into digital data.

Which of these data sources is analog?

1. The altitude of a bird as it flies through the sky
2. The average length of the songs sung by a particular bird
3. The number of reported sightings of a particular bird species in each zip code
4. A list of birds that are most commonly seen in a particular park