01.1 Convert the binary number 10001111 into a decimal number.

[1 mark]

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01.2 Convert the hexadecimal number 7D into binary. Write your answer as an 8-bit binary number. You should show your working.

[2 marks]

1 for working – e.g. 7 = 0111; D = decimal 13 = 1101

Answer: 01111101

01.3 Convert the decimal number 37 into hexadecimal. You should show your working.

[2 marks]

1 for working: 37 / 16 = 2 rem 5 [1]

Or: 37 = 00100101; 0010 = 2; 0101 = 5

Answer: 25 (note: hexadecimal 25)

01.4 A student's answer to the question "Why is hexadecimal often used instead of binary?" is shown below.

Because it takes fewer digits it will take up less space in a computer's memory

Explain why the student's answer is incorrect

[2 marks]

all data stored as binary [1]

so data can't take up less space [1]

idea that hex is used by programmers rather than computers [1]

02 Benny has recorded an audio file on his computer. The file has a size of 2,300,000 kB. What is 2,300,000 kB in gigabytes? You should show your working

[2 marks]

1 for working divide by 1000 – e.g. 2,300,000 / 1000 = 2,300 MB [1]

2,300 MB / 1000 = 2.3 GB

Answer: 2.3 (no need for units)