2 **(a)** Data in a computer system is represented in binary.

Put **one** tick (✓) in each row to identify the minimum number of bits used to store each example of data.

Example of data	Number of bits						
	4	**8**	**16**	**24**	**32**	**64**	**128**
the hexadecimal value F139							
16 000 000 unique amplitude values							
an IPv4 address							
256 unique colours							
an IPv6 address							
the denary value 65 000							

[3]

(b) Convert the denary number –108 into a 12-bit two's complement binary number.

..... [1]

(c) A three-place arithmetic shift to the right is performed on the following two's complement negative integer.

Show the result of this arithmetic shift.

10010011

..... [1]

(d) Convert the following positive binary integer into hexadecimal.

1110001100111011

..... [1]