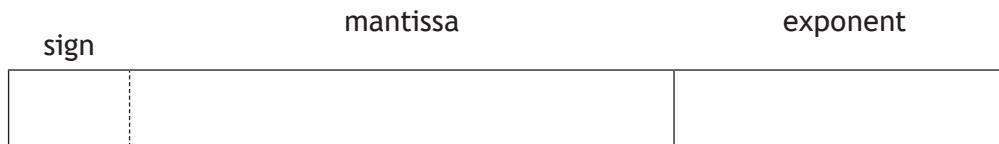**3.** **(a)** Convert the binary number below into floating-point representation.

$$-0.0000\ 0101\ 0000\ 1111$$

There are 16 bits for the mantissa (including the sign bit) and 8 bits for the exponent.

3

Space for working

mantissa   exponent

sign

(b) State the effect of increasing the number of bits allocated to the mantissa.

1

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