

1 Information representation – Part 2

—Answers

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1.1 $100 \times 100 \times 24 = 2.4 \times 10^5$ bits; $\div 8 = 3.0 \times 10^4$ bytes (≈ 29 KiB).

1.2 A vector graphic —it scales to any size (small icon or large sign) without going blurry.

1.3 (a) better quality (captures higher pitches); (b) larger file.

1.4 (a) lossless (a program must be recovered exactly); (b) lossy (huge data must fit limited bandwidth in real time).

1.5 4W, 2B, 2W —i.e. (4, W)(2, B)(2, W).

1.6 A vector graphic stores a few simple shapes and their properties. A photograph has millions of pixels of slightly different colour with no simple shapes to describe, so it cannot be captured this way —a bitmap (storing each pixel) is needed.