1. A single 0 or 1, the smallest piece of data, is called a _____.

   _____

2. Compression means storing the same data using:

   ☐ a faster computer

   ☐ fewer bits

   ☐ more colors

   ☐ more bits

3. Turning raw data into something that answers a real question produces:

   ☐ a bug

   ☐ more raw data

   ☐ information

   ☐ a byte

4. A program that takes scores in and gives back the average is doing:

   ☐ compression

   ☐ processing

   ☐ sampling

   ☐ nothing

5. What is the binary number 1011 in decimal?

   _____

6. Which data type must use lossless compression?

   ☐ a small web thumbnail

   ☐ a streamed video

   ☐ a music track for casual listening

   ☐ a program file (text/code)

7. Removing duplicate rows and filling missing values is part of cleaning data.

   ☐ True ☐ False

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_____

9. What is decimal 13 in binary?

   ☐ 1001

   ☐ 1110

   ☐ 1011

   ☐ 1101

10. Lossless compression trades data quality for a smaller file size.

    ☐ True ☐ False

1. **bit**

   Eight bits group into a byte.

2. **fewer bits**

   Fewer bits means smaller files that store and send faster.

3. **information**

   Information is data made useful – patterns and trends answering a question.

4. **processing**

   Input → processing → output produces a new fact, the average.

5. **11**

   Place values 8,4,2,1 with 1-bits at 8,2,1: 8+2+1 = 11.

6. **a program file (text/code)**

   One changed byte could break a program, so it must be lossless.

7. **True**

   Cleaning fixes problems so the analysis can be trusted.

8. **iteration**

   A loop visits each element in turn.

9. **1101**

   8 + 4 + 1 = 13, so bits 8,4,1 are on: 1101.

10. **False**

    False. Lossless compression keeps all the original data. It is lossy compression that discards some detail to make files smaller.

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