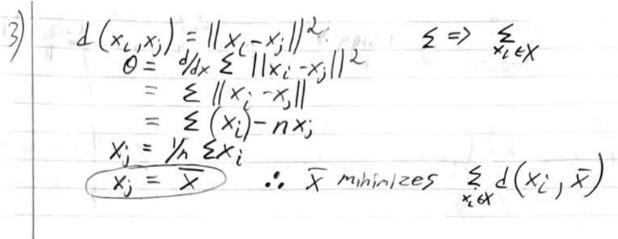
1.

- (a) binary, qualitative, ordinal
- (b) continuous, quantitative, ratio
- (c) discrete, quantitative, ratio
  - 1. I said this is discrete because the values able to be read from a physical light meter must be finite and therefore not continuous even though brightness levels are conceptually continuous.
- (d) discrete, qualitative, ordinal
- (e) discrete, qualitative, ordinal
- (f) continuous, quantitative, ratio
- (g) discrete, qualitative, ordinal
- (h) continuous, quantitative, ratio
- (i) discrete, quantitative, ratio
- (j) discrete, qualitative, ordinal
- (k) discrete, quantitative, ratio
  - 1. I am assuming that the angle can only be measured to the nearest nth of a degree instead of continuously. There are an infinite number of values between 0 and 360 (continuous) unless this assumption is made.
- (l) discrete, qualitative, ordinal
  - 1. I am assuming that the rating can be 1, 2, 3, 4, or 5 and nothing in between. There are technically an infinite number of value between 1 and 5 unless this assumption is made.
- (m) continuous, quantitative, ratio
- (n) discrete, qualitative, ordinal
- (o) discrete, qualitative, ordinal

2.

- (a) No, noise is never interesting because they represent obscured or distorted data. Yes, outliers can be interesting as they can represent an unusual observation that is significant.
- (b) Yes, noise can be viewed as an outlier if it appears far from the bulk of the data.
- (c) No, noise can be observed following the overall pattern of the data.
- (d) No, many outliers represent real, meaningful data that appear in unusual but significant cases.
- (e) Yes, noise has the potential to distort data into unusual data. Noise can also distort unusual data into typical data. It all depends on the characteristics of the noise as well as the typical data.

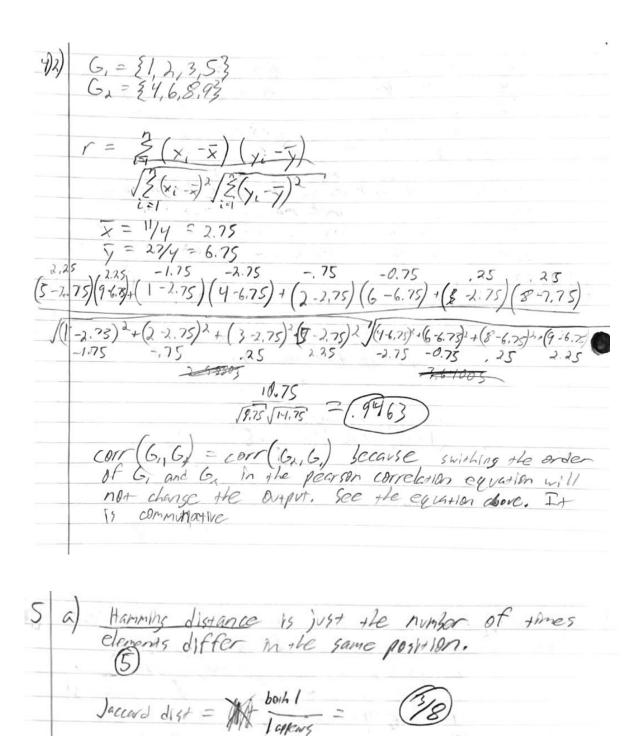


Logically, the first two groups to they are

[G: {1,2} and {4,5}. This is obviously the answer, but

I will explain how to find the answer if it were

less obvious. 4)1) Mx = 3 Calculate within-group variances: \$\frac{2}{8}(x-u\_{6}) = (1-1.5)^{2} + (2-1.5)^{2} = .5 Exec, (x-MG) = .5 .5+.5= This would need to be repeated for all of the possible constrations, but I am not going to
do that because it is obvious that I fully understand
the problem. Any constration will not result h
a variance less than 1. The answer is



Coeficient because simple marching coefficient is

similarity because they isnote cases where both

1 - Hamming distance according to the book.

are O.

Jacqued distance is more similar +0 cospe

6) a) Both measure the relative similarity between two vectors, but they are used in different situations.
b) both are -1 to 1.
c)

evalidear(xy) \( \frac{2}{x\_1 \cdot 2} - \frac{2}{x\_2 \cdot 2} \frac{2}{x\_1 \cdot 1} + \frac{2}{x\_1 \cdot 2} \\
= \sqrt{2 \cdot 2} \frac{2}{x\_1 \cdot 1} + \frac{2}{x\_1 \cdot 1} \\
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= \sqrt{2 \cdot 2} \frac{2}{x\_1 \cdot 1} \\
\tag{25 \left( \frac{1}{x\_1 \cdot 2} - \frac{2}{x\_1 \cdot 1} \tag{2} \\
= \frac{2}{x\_1 \cdot 2} \frac{2}{x\_1 \cdot 1} \\
\tag{25 \left( \frac{1}{x\_1 \cdot 2} - \frac{2}{x\_1 \cdot 2} \tag{2} \\
= \frac{2}{x\_1 \cdot 2} \frac{2}{x\_1 \cdot 2} \\
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\tag{25 \tag{25 \tag{2}} \tag{25 \tag{25 \tag{2}} \tag{25 \

Dimonstandity reduction involves reducing the number of features in a dayaset without comparing the integrity of the data. It is typically used when flore are large amounts of data. Diversionality reduction tonds to gived up comparison the art reduces the space required to store the data. Linear respects are ension to compare and simpler to concieve, but they can be too simple and have the data integrity. Nonlinear remade are bester at preming the more compler relationships in the data, but they are more comparationally expensive and tend to be prove to data.