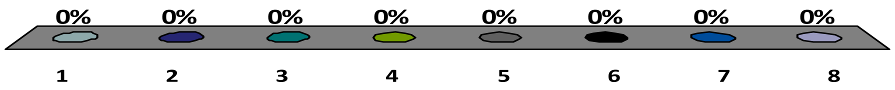
For which items do we need to identify the intensity of the load ?

A Compare Windows 2000 Professional versus Linux.
B Design a rate control for an internet audio application.
C Compare various wireless MAC protocols.
D Say how many servers a video on demand company needs to install.

1. None
2. A
3. B
4. C
5. D
6. A and B
7. C and D
8. All

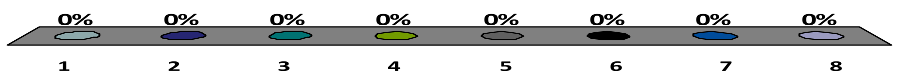


Say what is true

a «non dominated metric» means

A. a metric value that is better than or equal to all others
B. a metric value that is better than all others
C. a metric vector that is better or as good as all others
D. a metric vector for which no other vector is better

1. None
2. A
3. B
4. C
5. D
6. A and C
7. B and D
8. All



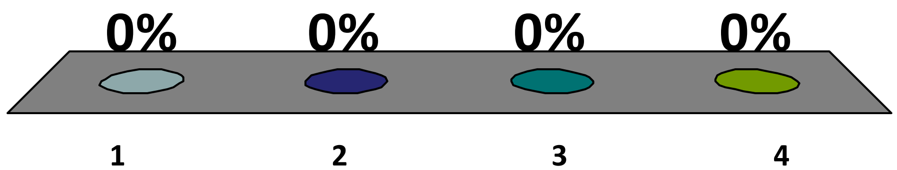
Items are classified as X1, X2, X3, Y1, Y2 or Y3. Every item has a chance of failing or not. We test all X1 and Y1 items and find that the X1 items have a higher chance of failing than the Y1; idem for X2 vs Y2, X3 vx Y3.

⇒ an X item has a higher chance of failing than a Y item

1. True
2. False
3. It depends
4. I don’t know

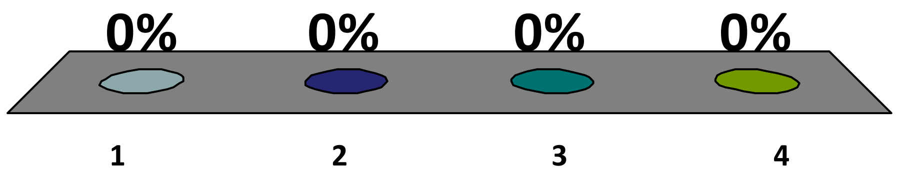
The «scientific method» means

1. Carefully screen all experimental conditions
2. Beware of hidden factors
3. Do not draw a conclusion until you have exhausted all attempts to invalidate it
4. I do not know



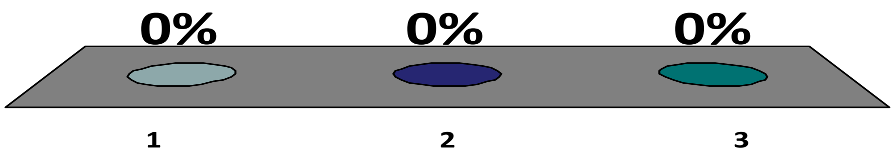
A nuisance factor is

1. An unanticupated experiemental condition that corrupts the results
2. A condition in the system that affects the performance but that we are not interested in
3. An unpleasant part of the performance evaluation
4. I do not know



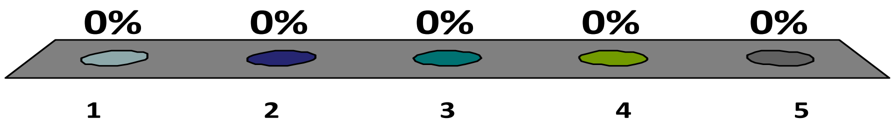
Joe increases the number of gateways and throughput decreases.

1. This is impossible in theory, it must be due to a software bug
2. This may happen in a fully functional system, with no software bug
3. I do not know



We increase the number of gateways and throughput decreases. Which pattern can explain this?

1. Latent congestion collapse
2. Bottleneck
3. Competition side effect
4. Congestion collapse
5. I don't know



We do 10 independent simulations to measure a response time and obtain (in ms):

1.01

1.02

0.98

1.00

1.02

100.00

1.01

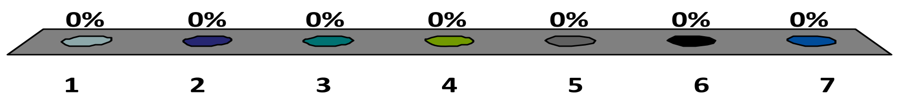
0.99

1.00

1.01

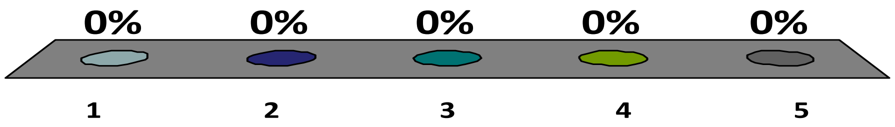
Give a 95% confidence interval for the response time.

1. [0.98 ; 100]
2. [0.98 ; 1.02]
3. [0.99; 100.00]
4. [0.99 ; 1.02]
5. [-7.5   29.3]
6. [-8.5   30.3]
7. I don’t know



We have tested a system for errors and found 0 error in 37 runs. Give a confidence interval for the probability of error.

1. [0% ; 2.7%]
2. [0% ; 5.3%]
3. [0% ; 9.5%]
4. [0% ; 19.5%]
5. I don’t know



Which algorithm is a correct bootstrap-computation of a 95%-confidence-interval for Jain's fairness index ?

(we are given a set of 37 independent results $S = \{x_1, \dots, x_{37}\}$)

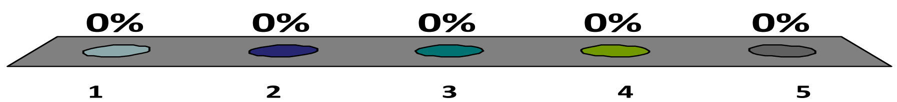
Algorithm A

for $n = 1:37$
  for $r = 1:99$
    draw one sample $y_{n,r}$ from S
  end
end
for $r = 1:99$
  compute Jain's fairness index
  f_r of $y_{1,r}, \dots, y_{37,r}$
end
CI = $[f_{(5)}, f_{(95)}]$

Algorithm B

for $r = 1:99$
  draw one random
    permutation σ_r of $\{1, \dots, 37\}$
end
for $r = 1:99$
  compute Jain's fairness index
  f_r of $x_{\sigma_r(1)}, \dots, x_{\sigma_r(37)}$
end
CI = $[f_{(5)}, f_{(95)}]$

1. None
2. A
3. B
4. Both
5. I don't know



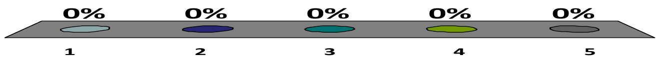
We have two independent measurements $X_1 = 7.4$ and $X_2 = 8.0$. Let $L = \min(X_1, X_2)$ and $\mathbf{U} = \min(X_1, X_2)$.

Say which statement is correct about the median θ of the distribution of X_1 and X_2.

A.
The probability of the event $\{L \leq \theta \leq U\}$ is 0.5

B.
The probability of the event $\{7.4 \leq \theta \leq 8.0\}$ is 0.5

1. None
2. A
3. B
4. Both
5. I don't know



We expect…

1. … a 95%-confidence interval to be wider than a 99%-confidence interval .
2. … a 95%-confidence interval to be narrower than a 99%-confidence interval.
3. It depends on the data
4. I don't know

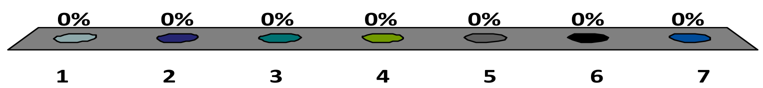
A data set $\{x_i\ , i = 1 \ldots 39\ \}$ contains 39 independent values. Which interval is a prediction interval at level 95% ?

A: $\left[x_{(13)}, x_{(27)}\right]$

B: $\left[x_{(1)}, x_{(39)}\right]$

C: $m \pm 1.96 \frac{s}{\sqrt{37}}$ where m is the mean and s is the standard deviation

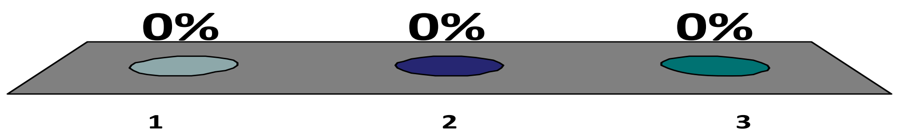
1. None
2. A
3. B
4. C
5. A and C
6. B and C
7. I don’t know



A data set x_i is such that $y_i = \log(x_i)$ looks normal. A 95%-prediction interval for y_i is $[L, U]$.

Is it true that a 95%- prediction interval for x_i is $[e^L, e^U]$?

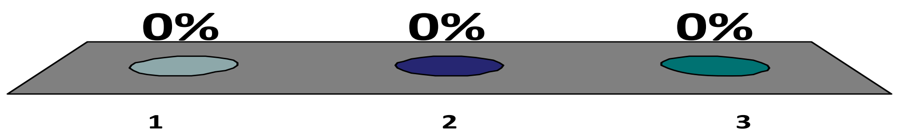
1. True
2. False
3. I don't know



A data set x_i is such that $y_i = \log(x_i)$ looks normal. A 95%-confidence interval for the mean of y_i is $[L, U]$.

Is it true that a 95%-confidence interval the mean of x_i is $[e^L, e^U]$?

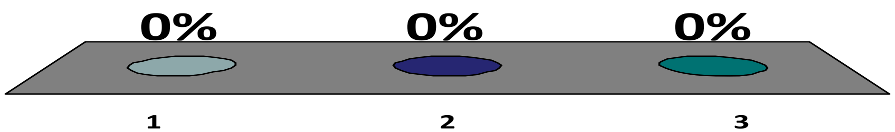
1. True
2. False
3. I don’t know



A data set x_i is such that $y_i = \log(x_i)$ looks normal. A 95%-confidence interval for the median of y_i is $[L, U]$.

Is it true that a 95%- confidence interval the median of x_i is $[e^L, e^U]$?

1. True
2. False
3. I don't know



A set of measurements is positively correlated. We compute a confidence interval for the median as if it were iid. The true confidence interval is …

1. Larger
2. Smaller
3. It depends on the data
4. I don't know