```
## Warning in if (sort(zs) == sort(unique(zs)) & sum(zs < 0) > 1) {: the
## condition has length > 1 and only the first element will be used
```

Question

Yasmine took 4 exams for her statistics class. Each exam yielded normally distributed scores (the class's scores were normally distributed). Yasmine's scores and the exams' means and standard deviations are shown below.

Exam	Yasmine's score	Mean of all scores	SD of all scores
1	74.58	89.8	12.9
2	74.63	68.2	6.7
3	80.98	87	12.8
4	83.71	71.9	14.4

On which exam did Yasmine perform worst compared to other people?

Solution

We compare the z-scores. The smallest z-score corresponds to the worst score.

Exam	formula	z-score
1	$z = \frac{74.58-89.8}{12.9}$	-1.18
2	$z = \frac{74.63-68.2}{6.7}$	0.96
3	$z = \frac{80.98-87}{12.8}$	-0.47
4	$z = \frac{83.71-71.9}{14.4}$	0.82

Thus, Yasmine did worst on exam 1.

Meta-information

extype: string exsolution: yo exname: UZ extol: 0.01