

AP Statistics - z-Scores and the Normal Distribution - Test

Common Core AP STAT 1.10, AP STAT 1.11, HSS-ID.A.4 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 45-minute test covers z-scores, the empirical rule, normal probabilities, and percentiles. Draw a shaded sketch for each probability, show the standardizing step, and state conclusions in context.

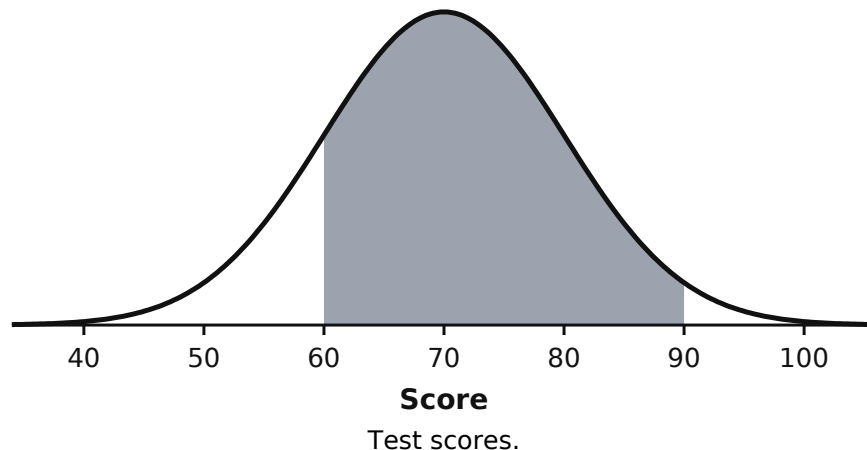
About this test

- Grade: AP Statistics
- Chapter: z-Scores and the Normal Distribution
- Standards: AP STAT 1.10, AP STAT 1.11, HSS-ID.A.4
- Time: 45 minutes
- Total: 20 points

Question 1 - z-scores [3 pts]

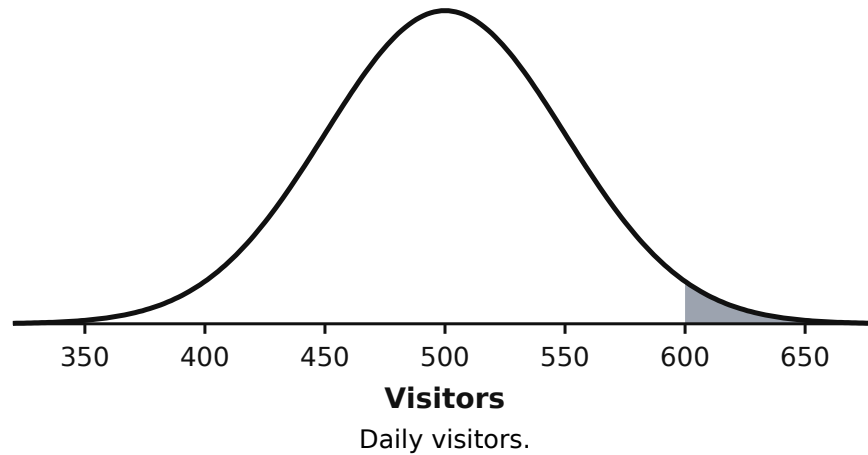
Test scores are normal with mean 70 and standard deviation 10. (a) Find the z-score of 88. (1 point) (b) Find the score with $z = -0.5$. (1 point) (c) Interpret z in (a). (1 point)

Question 2 - Normal area [3 pts]



Find the proportion of scores between 60 and 90. (3 points)

Question 3 - Empirical rule [2 pts]



Daily visitors are approximately normal with mean 500 and standard deviation 50. Use the empirical rule to find the percent of days with more than 600 visitors.

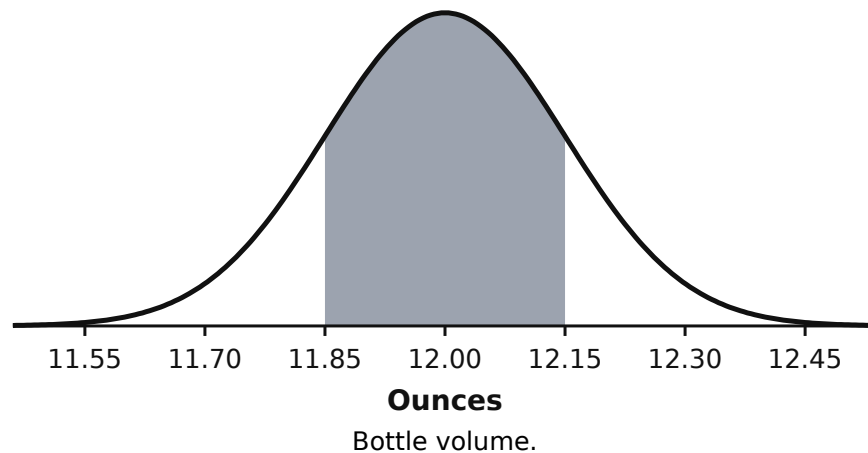
Question 4 - Percentile [3 pts]

Find the score at the 80th percentile for the test-score distribution (mean 70, sd 10). Interpret it. (3 points)

Question 5 - Compare scores [2 pts]

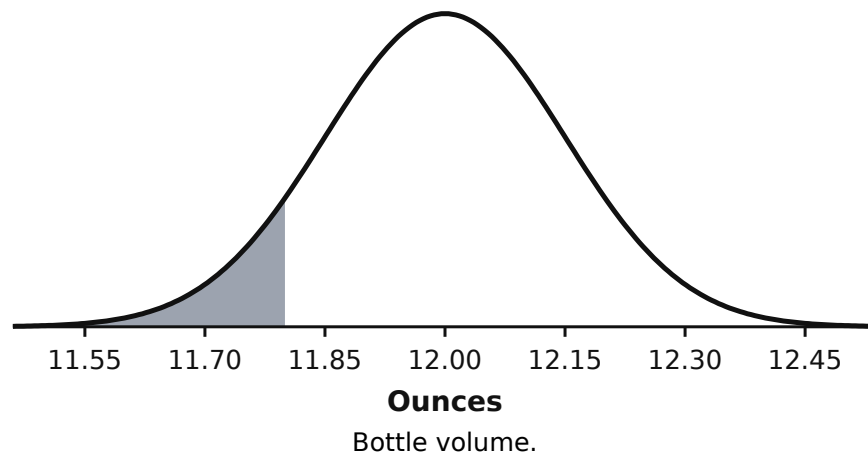
Priya scored 1,180 on a test with mean 1,050 and sd 100. Diego scored 27 on a test with mean 21 and sd 4.5. Who did relatively better?

Question 6 - Counts from the rule [2 pts]



Of 800 bottles in a day (volumes normal with mean 12 oz and sd 0.15 oz), about how many have between 11.85 and 12.15 oz?

Question 7 - Rejection rate [3 pts]



Bottle volumes are normal with mean 12 oz and sd 0.15 oz. Find the proportion with less than 11.8 oz. (3 points)

Question 8 - Unit change [2 pts]

Weights in pounds have mean 150 and sd 20. Find the mean and sd in kilograms (1 lb = 0.4536 kg). Does a z-score change?