

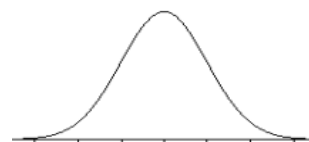
INTERPRETING Z-SCORES Worksheet #2
NORMAL DISTRIBUTIONS

Name _____

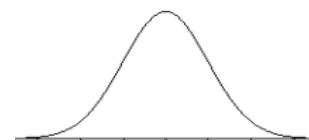
FINDING A PERCENT/PROPORTION given an x value	FINDING AN X VALUE given a percentage/proportion
Standardize x to restate the problem in terms of a standard Normal variable z . Draw a picture to show the area of interest under the standard Normal curve. Then find the required area under the standard Normal curve using Table A.	Look in the body of Table A for the entry closest to the given proportion or the proportion to the left of given proportion to find the corresponding z . " <i>Unstandardize</i> " to transform the solution from a z -score to a value of x using the equation $z = \frac{x - \mu}{\sigma}$.

Scores on the Wechsler Adult Intelligence Scale, a standard IQ test, are approximately normal for the 20 to 34 age group with $\mu = 110$ and $\sigma = 25$.

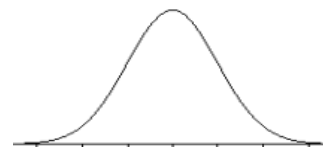
1. What percent of this age group have an IQ less than 100?



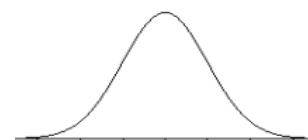
2. What percent of this age group have an IQ between 90 and 115?



3. Find the 80th percentile of the IQ scores distribution of 20 to 34 year olds.

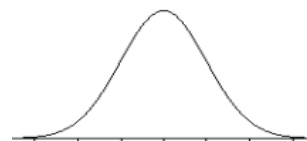


4. Find the IQ score which separates the lowest 25% of all IQ scores for this age group from the highest 75%.

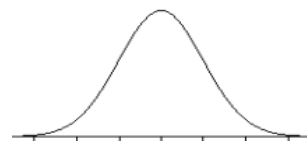


The adult men of the Dinaric Alps have the highest average height of all regions. The distribution of height is approximately normal with a mean height of 6 ft 1 in (73 inches) and standard deviation of 3 inches.

5. Find the 40th percentile of the height of Dinaric Alps distribution for men.

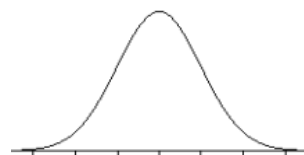


6. What percentage of men have a height greater than 74 inches?

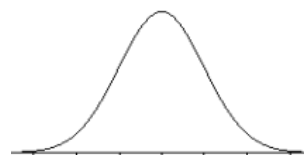


Sect. 3.2 Worksheet #2 p.2

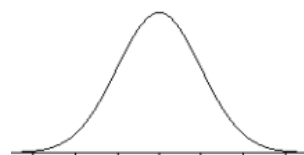
7. What percentage of men have a height between 70 inches and 78 inches?



8. The average height of adult American men is 69 inches. What percent of the adult men in the Dinaric Alps are taller than the average American man?

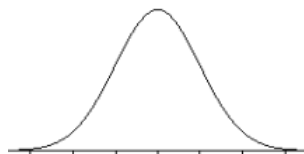


9. What would be the minimum height of man in the Dinaric Alps that would place him in the top 10% of all heights?

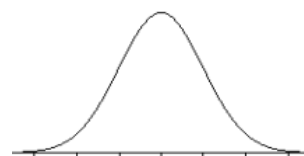


The length of pregnancy for the Asian elephant has an approximately normal distribution with an average length of 609 days and standard deviation of 31 days.

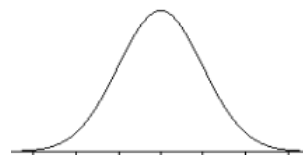
10. How long do the longest 5% of all elephant pregnancies last?



11. What percent of the elephant pregnancies last between 600 and 615 days?



12. The shortest 20% of all elephant pregnancies last fewer than how many days?



13. The middle 50% of all elephant pregnancies fall between how many days?

