

AP STATISTICS

Review Unit III – Normal Distributions

ANSWERS (make sure you show your work if you want credit!!!)

1. 68, 95, 99.7

2. Test A ; A: $z = 1.8$; Test B: $z = 1.75$

3. $z = 1.2$: This employee's salary is 1.2 standard deviations above the mean salary of all employees at this company.

$z = -2.3$: This employee's salary is 2.3 standard deviations below the mean salary for all employees at the company.

Note: Hopefully you did NOT try to relate these z-scores to percentiles or probabilities using the z-table – the problem does NOT state that salaries at this company are normally distributed!

4. B 5. D 6. B 6b. [well... variance is the square of standard deviation...]

7. E (We hope you didn't try to use the z-table for this one!) 8. C 9. B

10. D 11. A 12. E 13. A 14. A

15. a) 0.2375 b) 0.0432 c) 0.5359 d) 47.64 cm
 e) 2 SD's above the mean: at least 57cm (or 3 SD's above the mean: 60.5 cm)

16. a) 0.9332 b) $0.3085 + 0.0668 = 0.3753$ c) 53.56 inches (roughly 4 feet, 5 1/2 inches)

17. a) about 11.7% b) about 71.37 ppm c) at most 2.43 ppm
 d) The scrubber must be more consistent in its performance from batch to batch.

18. b) 68% c) 16% d) 5 and 8 e) 0.815 f) Andrew is an outlier

19. a) approximately 8.09 minutes b) more than 100.19 minutes