Deliverable 02 – Worksheet

**Instructions:** The following worksheet is shown to you by a student who is asking for help. Your job is to help the student walk through the problems by showing the student how to solve each problem in detail. You are expected to explain all of the steps in your own words.

**Key:**

* **<i>** - This problem is an incorrect. Your job is to find the errors, correct the errors, and explain what they did wrong.
* **<p>** - This problem is partially finished. You must complete the problem by showing all steps while explaining yourself.
* **<b>** - This problem is blank. You must start from scratch and explain how you will approach the problem, how you solve it, and explain why you took each step.

1. **<p>** Assume that a randomly selected subject is given a bone density test. Those tests are normally distributed with a mean of 0 and a standard deviation of 1. Find the probability that the bone density score for this subject is between -1,93 and 2.37

**Student’s answer:** We first need to find the areas under the Z table for these values.

For -1.93 the area from the left is 0.268, and for 2.37 the area is .9911

**Continue the solution:**

*Finish the problem giving step-by-step instructions and explanations.*

1. **<b>** The U.S. Airforce requires that pilots have a height between 64 in. and 77 in. If women’s heights are normally distributed with a mean of 63.8 in. and a standard deviation of 2.6 in, find the percentage of women that meet the height requirement.

**Answer and Explanation:**

*Enter your step-by-step answer and explanations here.*

1. **<i>** Women’s pulse rates are normally distributed with a mean of 69.4 beats per minute and a standard deviation of 11.3 beats per minute. What is the Z-score for a woman having a pulse rate of 66 beats per minute?

**Student’s answer:**

Let z = (x-μ)/σ

z = (69.4 - 66)/11.3

z = .301 (rounded)

**Corrections:**

*Enter your corrections and explanations here.*

1. **<b>** If we look up the z value of -1.645 in the Z table what is the cumulative area from the left under the curve, and what is the area on the right of that value?

**Answer and Explanation:**

*Enter your step-by-step answer and explanations here.*

1. **<i>** What is the Z value for an area under the standard normal distribution of 0.8980 from the right?

**Student’s answer**: looking at the positive Z table, we find an area of .8980 and we see that the Z value is 1.27

**Corrections:**

*Enter your corrections and explanations here.*

1. **<b>** Manhole covers must be a minimum of 22 in. in diameter, but can be as much as 60 in. Men have shoulder widths that are normally distributed with a mean of 18.2 and a standard deviation of 1.0 in. Assume that a manhole cover is constructed with a diameter of 22 in. What percentage of men will fit into a manhole with this diameter?

**Answer and Explanation:**

*Enter your step-by-step answer and explanations here.*