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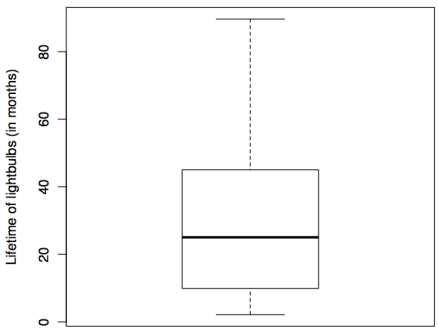
WeBWorK assignment `Assignment-01` is due on 09/23/2012 at 09:00pm PDT.

The following diagram shows a boxplot for the lifetimes (in months) of a sample of 30 light- bulbs.



a) What is the median lifetime?

- 43.71
- 30.34
- 25.04
- 89.64
- 10.22

b) Which of the following statements is correct?

- The mean is equal in value to the median
- The mean is larger in value than the median
- The mean is smaller in value than the median
- There is insufficient information to make a comparison of the mean and median

Answer(s) submitted:

- `25.04`
- `The mean is larger in value than the median`

(correct)
Correct Answers:

- `25.04`
- `The mean is larger in value than the median`

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3. (1 pt) Events A and B are mutually exclusive. $P(A) = 0.4$ and $P(B) = 0.5$. Find $P(A \cup B)$ to one decimal place.
$P(A \cup B) =$ _____
Answer(s) submitted:

- `0.9`

(correct)
Correct Answers:

- `0.9`

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4. (1 pt) Events A and B are independent. $P(A) = 0.1$ and $P(B) = 0.3$. Find $P(A \cup B)$ to two decimal places.
$P(A \cup B) =$ _____
Answer(s) submitted:

- `0.37`

(correct)
Correct Answers:

- `0.37`

Items in your inventory are produced at three different plants: 50% from plant A1, 30% from plant A2 and 20% from plant A3. You are aware that your plants produce at different levels of quality: A1 produces 5 percent defectives, A2 produces 7 percent defectives and A3 yields 8 percent defectives. You randomly select an item from your inventory and it turns out to be defective. Which plant is the item most likely to have come from?

- Plant A2
- Plant A3
- Plant A1

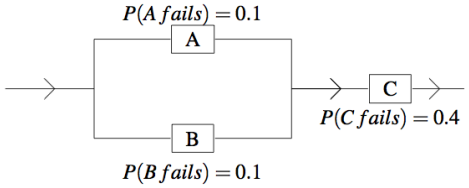
Answer(s) submitted:

- `Plant A1`

(correct)
Correct Answers:

- `Plant A1`

Calculate the reliability (to three decimal places) of the system described in the following figure. The probabilities of failure for each component is given. Note that the components work independently of one another.



Reliability of system = _____
Answer(s) submitted:

- `0.594`

(correct)
Correct Answers:

- `0.594`

7. (1 pt) Events A and B are such that $P(A) = 0.1$, $P(B) = 0.3$, and $P(A \cap B) = 0.1$.

Find $P(A|B^c)$. You should type a fraction.

$P(A|B^c) =$ _____

Answer(s) submitted:

- 0

(correct)

Correct Answers:

- 0

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8. (3 pts) A careless university student leaves her iClicker device behind with probability 1/4 each time she attends a class. She sets out with her iClicker device to attend 5 different classes (each class is in a different lecture theatre).

Part 1)

If she arrives home without her iClicker device (after attending 5 classes), what is the probability (to 3 SIGNIFICANT figures) that she left it in the 5th class?

Probability = ____

Part 2)

What is the probability (to 3 significant figures) that she will leave her iClicker device in the 5th class?

Probability = ____

Part 3)

If she arrives home without her iClicker device and she is sure she has the iClicker device after leaving the first class, what is the probability (to 3 SIGNIFICANT figures) that she left it in the 5th class?

Probability = ____

Answer(s) submitted:

- 0.104
- 0.0791
- 0.154

(correct)

Correct Answers:

- 0.104
- 0.0791
- 0.154