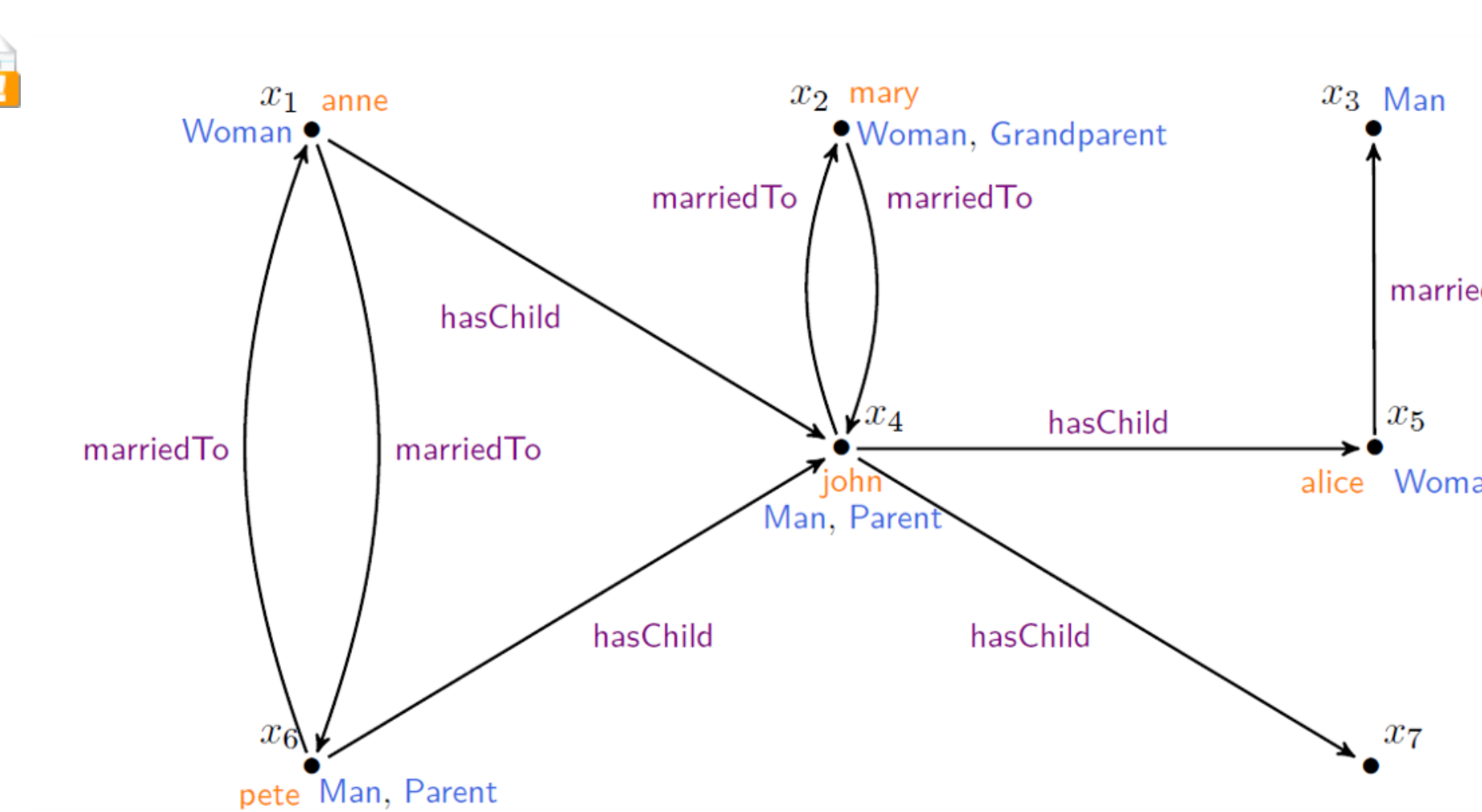
Review Test Submission: MAIR mock exam

User	Otto Mättas
Course	2020-2021 1-GS Methods in AI research (INFOMAIR)
Test	MAIR mock exam
Started	11/4/20 3:07 PM
Submitted	11/4/20 6:03 PM
Status	Needs Grading
Attempt Score	Grade not available.
Time Elapsed	2 hours, 55 minutes
Results Displayed	All Answers, Submitted Answers, Correct Answers, Feedback, Incorrectly Answered Questions

Question 1

Needs Grading



List all the elements of the set obtained by applying the interpretation function from the interpretation depicted above to the following concept:

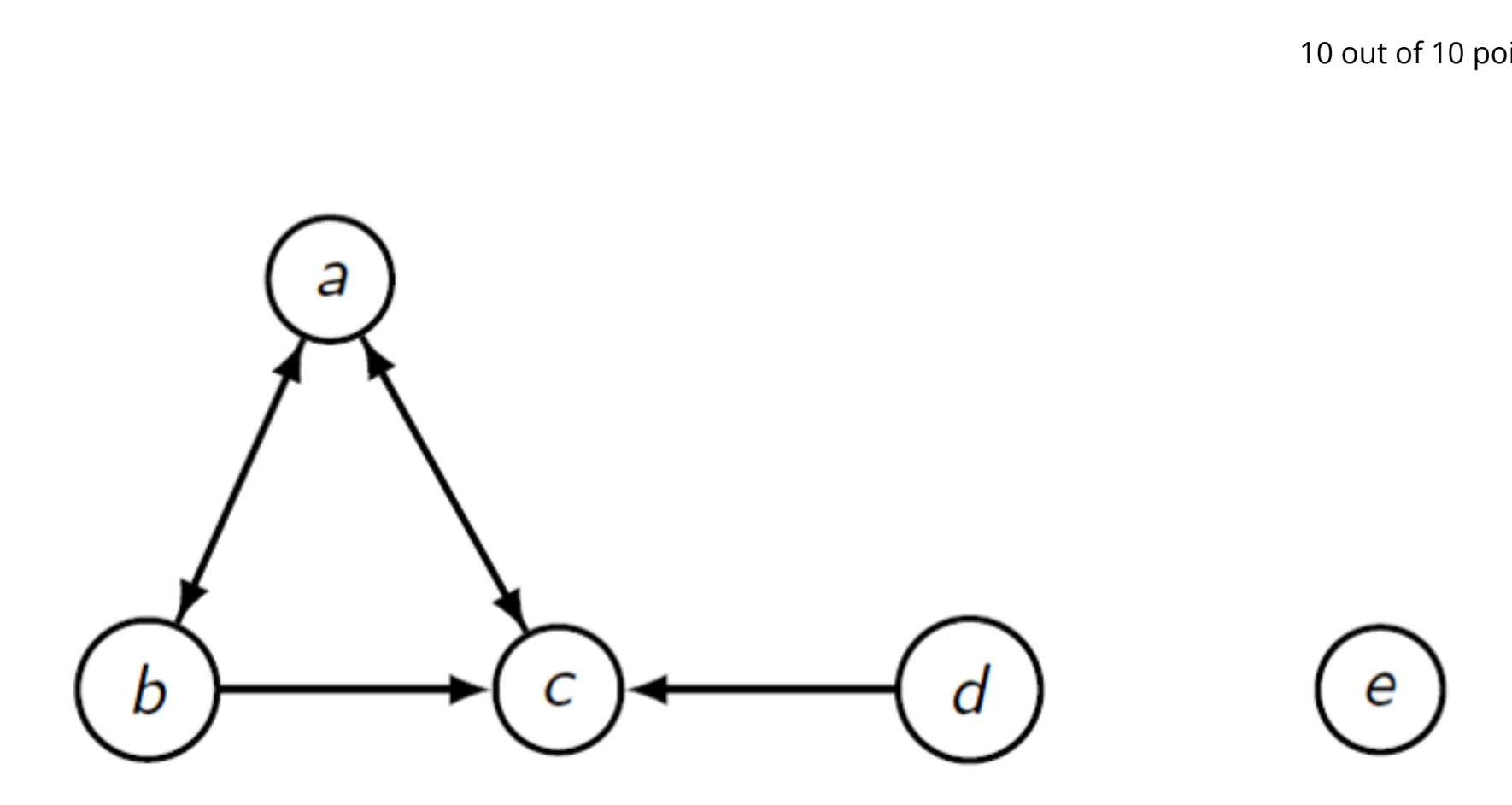
$\exists hasChild.T \sqcap \neg \exists hasChild.Woman$

where T denotes the "top" concept, and $\sqcap$ is the concept conjunction.

Selected Answer: {x1,x6}
Correct Answer: x1, x6
Response Feedback: [None Given]

Question 2

10 out of 10 points



Consider the argumentation graph depicted above.

Only one of the following statements about this graph holds. Which one?

Selected Answer: Each preferred extension contains at least three arguments

Answers:

- The grounded extension contains at most one argument
- There exists a preferred extension which is not stable
- Every argument from the graph belongs to at least one complete extension
- Each preferred extension contains at least three arguments

Response Feedback: The extensions are:

Complete: {d,e}, {a,d,e}, {b,d,e}

Grounded: {d,e}

Preferred, stable: {a,d,e}, {b,d,e}

Question 3

0 out of 10 points

Select the correct translation of Description logic concept

$\exists hasChild.Student \sqcap \forall hasChild.Smart$

into First-order logic (in the above formula $\sqcap$ denotes the concept conjunction).

Selected Answer: $\exists y(hasChild(x,y) \wedge Student(y)) \wedge \forall y(hasChild(x,y) \wedge Smart(y))$

Answers:

- $\exists y(hasChild(x,y) \wedge Student(y)) \wedge \forall y(hasChild(x,y) \rightarrow Smart(y))$
- $\exists y(hasChild(x,y) \rightarrow Student(y)) \wedge \forall y(hasChild(x,y) \rightarrow Smart(y))$
- $\exists y(hasChild(x,y) \wedge Student(y)) \wedge \forall y(hasChild(x,y) \wedge Smart(y))$
- $\exists y(hasChild(x,Student(y))) \wedge \forall y(hasChild(x,Smart(y)))$

Question 4

10 out of 10 points

If M is a model of the formula

$\exists x \exists y (Friend(George,x) \wedge Friend(George,y) \wedge \neg(x=y))$

then only one of the following statements necessarily holds. Which one?

Selected Answer: M has at least two elements

Answers:

- The elements of M are humans
- M has at least two elements
- M has at most one element
- There are two different constants of M that correspond to the constant symbol George

Question 5

10 out of 10 points

Chris Janssen - Cognitive Modeling

Jessie wants to improve the design of a website to identify which items take long to find and which items are confusing (e.g., lead to errors). For this effort she also wants to develop a model. To develop the model and compare it to human data, she has access to behavioral data of 10 users that browse the website: eye fixation times, mouse clicks, and key presses. which of Newell's bands is most appropriate to model human behavior for this situation?

Selected Answer: Cognitive

Answers:

- Algorithmic
- Biological
- Rational
- Social
- Cognitive
- Computational
- Implementation

Question 6

10 out of 10 points

Chris Janssen - Experimentation

Jasmine runs a reaction time experiment, with a between-subjects manipulation of whether people drank a cup of coffee before the experiment yes or no. However, she had a confound in her experiment: the coffee drinkers all did the experiment at 9 am, the non-coffee drinkers all did the experiment at 11 am. Which of the following types of validity is being violated due to this confound? If you are in doubt between multiple, select the most severe violation:

Selected Answer: Internal

Answers:

- External
- Construct
- Ecological
- Internal

Question 7

Needs Grading

Chris Janssen - designing responsible AI

In class we discussed the article by Amershi and colleagues ("Microsoft paper") with the guidelines for Human-AI interaction. The article provides 18 guidelines across 4 "top-level categories".

For this question, please think of an AI-infused technology that you are familiar with and where one design principle is not applied well. This should be your own example, not one that I gave in the lecture or that is extensively discussed in the paper.

With your example in mind, please answer these questions. Make sure to number your answers, so I see which answer belongs to what subquestion:

1. Explain briefly what your AI-infused technology example is. The description can be very brief; it should be at such a level that I (Chris) understand what you are talking about. You do not need to go into the full technical details of the technology.
2. Write down 1 guideline that is NOT adhered to in this technology (give the guideline only).
3. Write down what top-level category this guideline belongs to (again, only the name).
4. Explain briefly why you assess that the technology does not adhere to this design principle. You do not need to go deep into the technical realization, it can be a more conceptual description similar to how we discussed examples in class.

Selected Answer: [None Given]

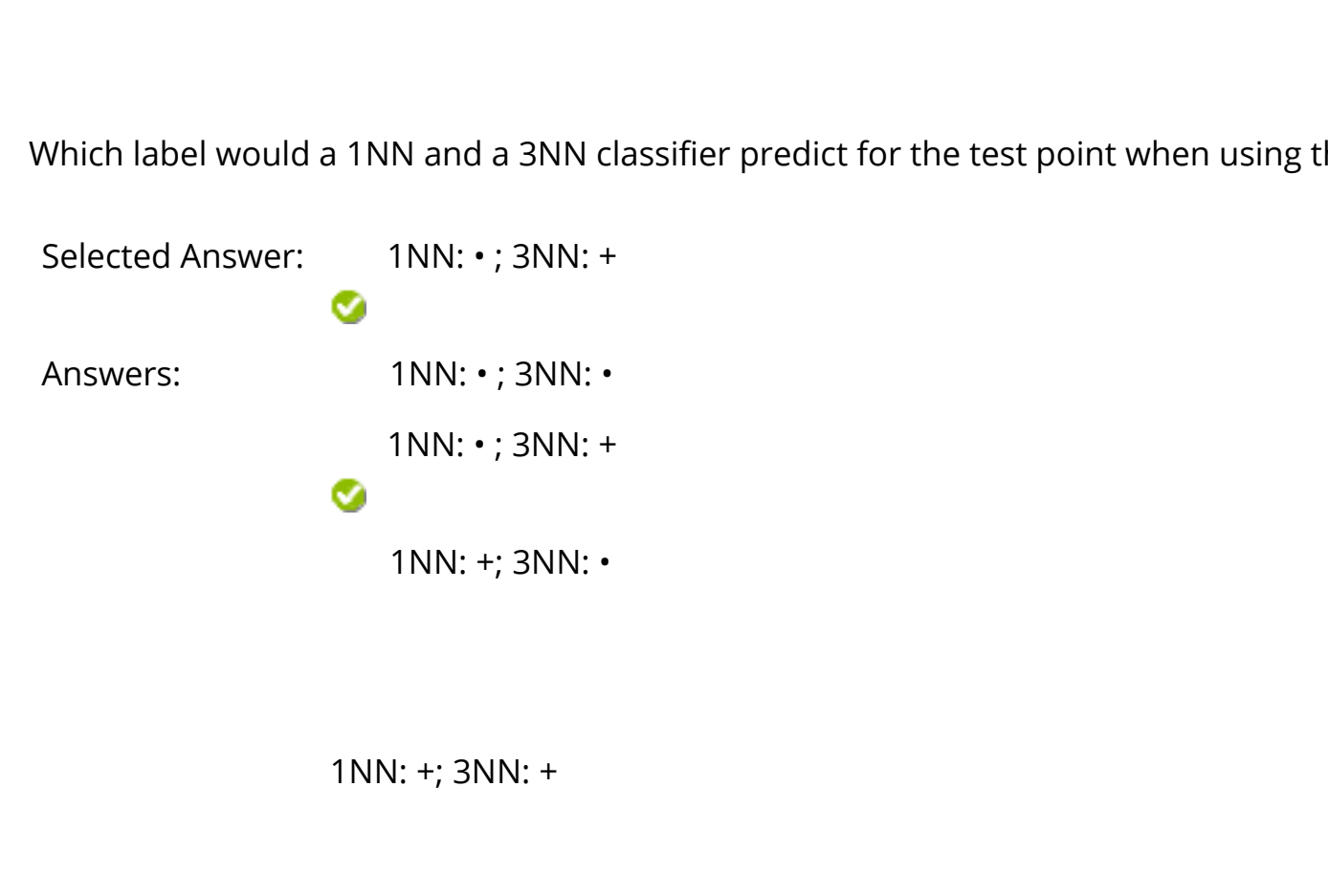
Correct Answer: Things to check in your answer:
- Make sure that your answer is clearly numbered.
- Where I asked you to only give a name (subparts 2,3), did you indeed only give the name, or did you provide a detailed elaboration? The name is enough
- Did you not go into too much technical detail about the application (the "nitty gritty"). If that is needed to explain your point, that might be OK. But know that if you zoom in too much on the details, I might get lost in your explanation and not see the forest through the woods.
- Similarly, if you are just giving 1 sentence that contains a circular argument ("X is the case, because it is doing X") or some other argument that I can't verify ("X is the case because Donald Trump says so"), I can't award you points.
- is this really your own example, or something you just copied of the slides or the paper? I want to see your own example.
In an essay question like this, most points would go to your explanation :-)

Response Feedback: [None Given]

Question 8

10 out of 10 points

The figure below shows you a dataset with four training points (labeled with • and +) and a test point (marked with ?).



Which label would a 1NN and a 3NN classifier predict for the test point when using the Manhattan distance?

Selected Answer: 1NN: • ; 3NN: +

Answers:

- 1NN: • ; 3NN: •
- 1NN: • ; 3NN: +
- 1NN: +; 3NN: •
- 1NN: +; 3NN: +

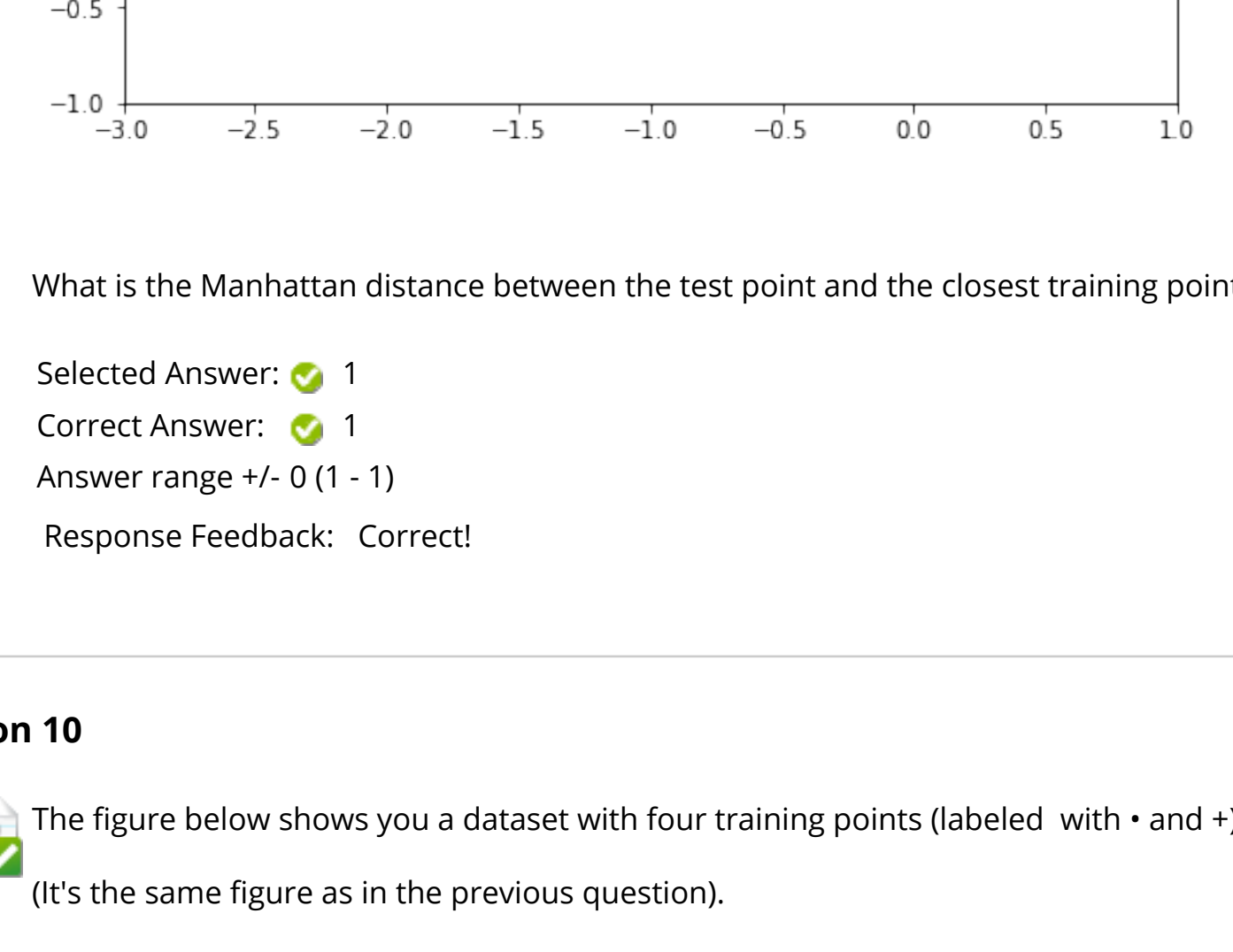
Response Feedback: Correct!

Question 9

10 out of 10 points

The figure below shows you a dataset with four training points (labeled with • and +) and a test point (marked with ?).

(It's the same figure as in the previous question).



What is the Manhattan distance between the test point and the closest training point?

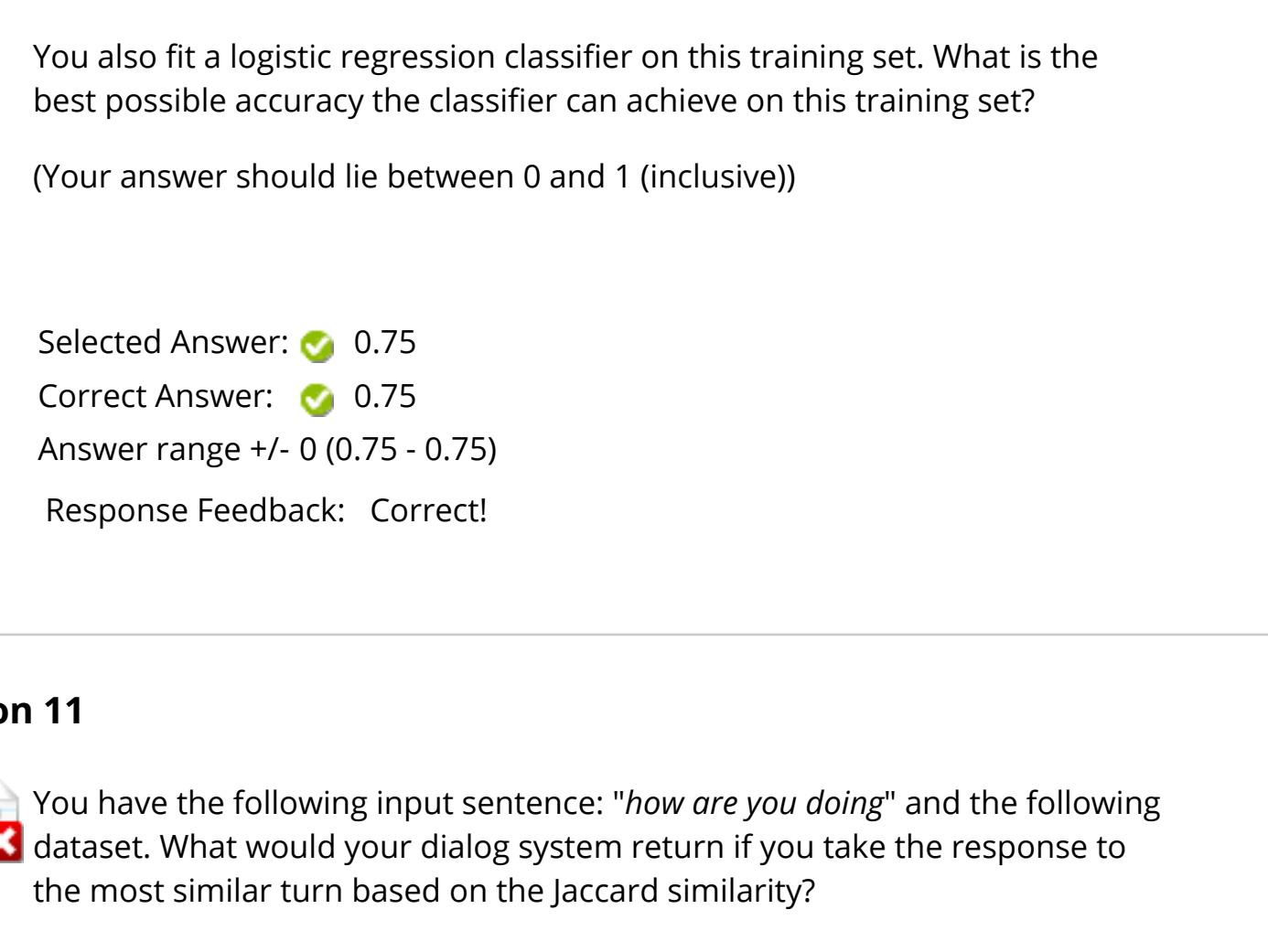
Selected Answer: 1
Correct Answer: 1
Answer range +/- 0 (1 - 1)
Response Feedback: Correct!

Question 10

10 out of 10 points

The figure below shows you a dataset with four training points (labeled with • and +) and a test point (marked with ?).

(It's the same figure as in the previous question).



You also fit a logistic regression classifier on this training set. What is the best possible accuracy the classifier can achieve on this training set?

(Your answer should lie between 0 and 1 (inclusive))

Selected Answer: 0.75
Correct Answer: 0.75
Answer range +/- 0 (0.75 - 0.75)
Response Feedback: Correct!

Question 11

0 out of 10 points

You have the following input sentence: "*how are you doing*" and the following dataset. What would your dialog system return if you take the response to the most similar turn based on the Jaccard similarity?

Turn	Response
hello how are you	fine
hi how are you doing	ok!

Selected Answer: hi how are you doing

Answers:

- hello how are you
- hi how are you doing
- fine
- ok!

Question 12

10 out of 10 points

You have the following input sentence: "*how are you doing*" and the following dataset. (Same as in the previous question.)

Turn	Response
hello how are you	fine
hi how are you doing	ok!

What is the Jaccard similarity between your input sentence

and "*hello how are you*"?

Selected Answer: 0.6
Correct Answer: 0.6
Answer range +/- 0 (0.6 - 0.6)

Question 13

Needs Grading

Do you have any further questions about the exam material of Dong Nguyen?

Selected Answer: [None Given]
Correct Answer: [None]
Response Feedback: [None Given]

Question 14

Needs Grading

Do you have any further questions about the exam material of Chris Janssen?

Selected Answer: [None Given]
Correct Answer: [None]
Response Feedback: [None Given]

Question 15

Needs Grading

Do you have any further questions about the exam material of Dragan Doder?

Selected Answer: [None Given]
Correct Answer: [None]
Response Feedback: [None Given]

Question 16

10 out of 10 points

This tests is shorter in length than the final exam.

How much time did you need to complete the test (excluding your questions for the lecturers)?

Selected Answer: 60-75 minutes

Answers:

- Less than 30 minutes
- 30-45 minutes
- 45-60 minutes
- 60-75 minutes
- 75-90 minutes
- More than 90 minutes

Response Feedback: Thank you for your feedback

Wednesday, November 4, 2020 10:32:59 PM CET

← OK