Unit 1 Quiz

Due Jan 23 at 11:59pm **Points** 8 **Questions** 8
Available Jan 18 at 12pm - Jan 23 at 11:59pm 5 days **Time Limit** None

Instructions

Unit 1 Quiz

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	1,227 minutes	7.75 out of 8

Score for this quiz: **7.75** out of 8
Submitted Jan 22 at 9:41am
This attempt took 1,227 minutes.

Question 1 — 1 / 1 pts

According to the lecture and reading assignment: “Problems are the possession of _____.”

- motivated stakeholders
- true innovators
- the tired, the poor, the huddled masses yearning to breathe free
- purpose-driven decision makers

Correct!

Question 2

0.75 / 1 pts

Some problems are hard to solve due to various fundamental characteristics as discussed in the lecture. These include (select all that apply):

Correct!
- [x] poor problem definition

Correct!
- [x] many conflicting objectives

ou Answered
- [x] linear constraints

Correct!
- [x] difficult to evaluate the quality of a solution

Correct!
- [x] uncertainty associated with some elements

Question 3

1 / 1 pts

What is the size of the search space of a Boolean satisfiability problem with 38 variables?

- [ ] 38
- [ ] 76
- [ ] 1444

Correct!
- [x] 274,877,906,944

- [ ] > 1,000,000,000,000,000

Question 4

1 / 1 pts

How many distinct tours are possible in a 12 city symmetrical TSP?

- 12
- 4,096
- 19,958,400 (Correct!)
- 479,001,600
- impossible to calculate

Question 5

1 / 1 pts

Given the optimization problem:

min $f(x_1,x_2,...,x_n)$

s.t. $g_i(x_1,x_2,...,x_n) <= b_i$ for i = 1, 2, ..., m

- there are n decision variables, and m constraints (Correct!)
- there are m decision variables, and n constraints
- the number of decision variables must equal the number of constraints, m=n

- the number of decision variables is n*m; the number of constraints is m

Question 6

1 / 1 pts

In the lecture notes a non-linear function G2 is provided. When n=3, which best describes the solution x_1=0.54, x_2 = 1.59, and x_3 = 0.87

- optimal

Correct!

- infeasible

- feasible, but not optimal

- unbounded

Question 7

1 / 1 pts

The fundamental paradigm that we use in this class with respect to approaching optimization problems:

- Acquire information, data, specifications to define a model; then visualize, simplify and formulate a problem; and finally, decide on an approach to produce a solution.

Correct!

- (selected) Acquire information, data, specifications to define a problem; then visualize, simplify and formulate a model; and finally, decide on an approach to produce a solution.
- Decide on an approach to produce a solution; then acquire information, data, and specifications to define the problem; then visualize, simplify and formulate a model.
- Verification, Validation, and Accreditation (VV&A)
- CRISP-DM

Question 8

1 / 1 pts

Rick came across Michonne and Gabriel one day as he was strolling through the neighborhood of Alexandria. These two are known to sometimes lie to Rick. In fact, Michonne lies to Rick every Monday, Tuesday, and Wednesday all day long and the other days she speaks the truth. Gabriel, on the other hand, lies to Rick all day on Thursdays, Fridays, and Saturdays. However, during the other days of the week he always tells the truth.

On this day, they told him the following:

> *Michonne:* Rick, yesterday I was lying.
> *Gabriel:* So was I.

On which day did they say this?

- Monday
- Tuesday

Correct!

- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Quiz Score: **7.75** out of 8