WEEK 1

Question 1

0 / 0 pts

The granularity property of spatial data indicates how to interpret the *spatial*, *temporal*, and *thematic* components of the data.

- True
- False

Correct. Granularity is in essence a spatial property (although metaphorically it could be transferred to temporal and thematic components - think about it).

Question 2

0 / 0 pts

A globe is not a map.

- True
- False

Correct. It is not a map because it is not a projected (planar) representation.

Question 3

0 / 0 pts

Which type of cartographic generalization is represented in the following picture?

- Displacement
- Aggregation

  Correct: elements are aggregated to more general ones.
- Classification
- Refinement

Correct.

Question 4

0 / 0 pts

"Lateral circles are concentric circles around the poles" is a property of true projections.

- (•) True
- ( ) False

Correct. In some cases they are even straight lines -- concentric circles with infinite radius.

Question 5

0 / 0 pts

The azimuthal projection is not a true projection.

- (•) True
- ( ) False

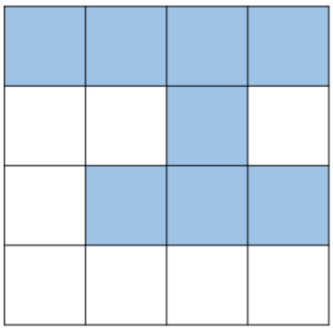
Incorrect. Please revisit the slides of - true projection.

WEEK2

Question 1

0 / 0 pts

How long is the boundary of the blue feature?



You Answered

- 8

- 16

- 4

Correct Answer

- 18

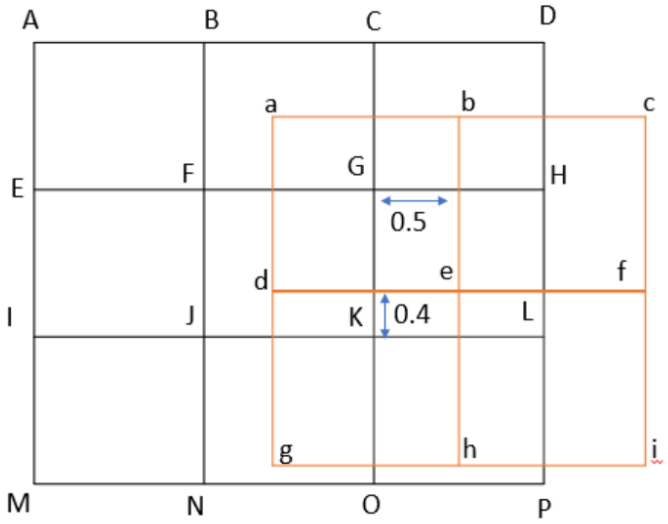
Incorrect. Please revisit the slide - Raster data geographic feature.

数 edge

Question 2

0 / 0 pts

The following temperatures are observed at the places A-P: A=47, B=52, C=55, D=42, E=56, F=41, G=40, H=50, I=55, J=52, K=50, L=40, M=46, N=43, O=52, P=56.



What is the temperature at the place 'e', 50 applying nearest neighbourhood interpolation, and 45 applying bilinear interpolation?

Answer 1:

Correct!

50

Answer 2:

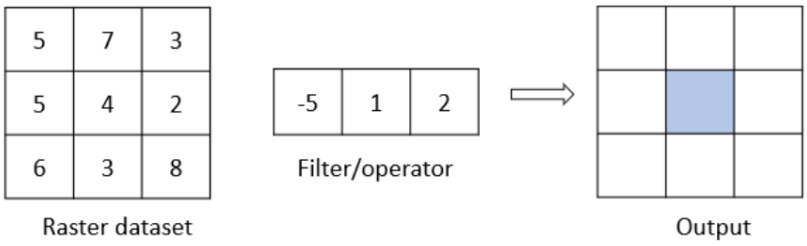
Correct!

45

Question 3

0 / 0 pts

Given a raster dataset and a filter below, what will be the value of the labeled cell applying this focal operation?



0

Correct! -17

4

9

Correct.

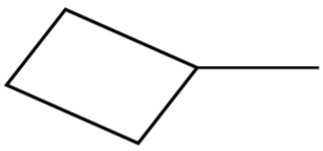
只有中间一行的话就只取中间一行，不算其他格子，只用这三个 cell apply filter 算中间格子

Week3

Question 1

0 / 0 pts

The following figure represents the complex features of vector data model



Correct! True

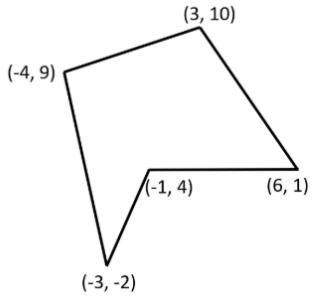
False

Correct!!

Question 2

0 / 0 pts

The area of the given polygon is



- 120
- 63.5
- 127
- Correct! 60

Correct!!

Question 3

0 / 0 pts

Determine the position of the point R relative to the line segment PR. Given, P = (1,0), Q = (3,4) and R = (2,2)

- R is left of PR
- R is right of PR
- Correct! R is linearly dependent to PQ

Correct!!

WEEK4

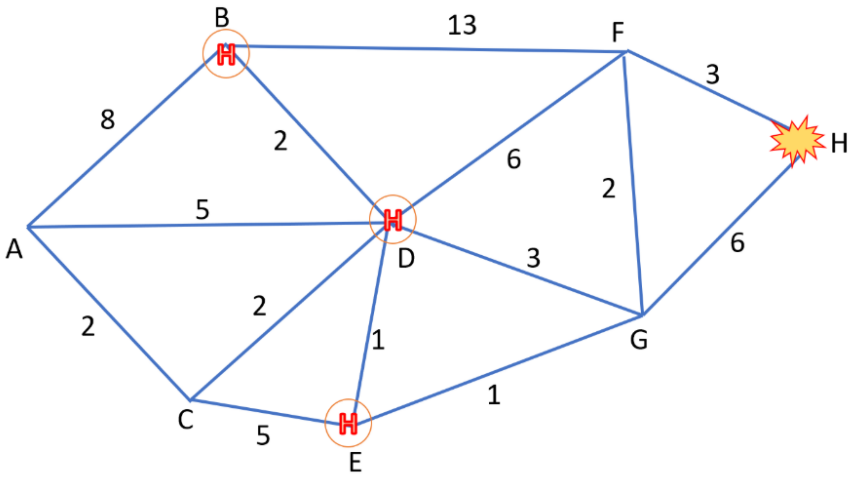
Partial

Question 1

0 / 0 pts

The following graph presents a road network where each edge presents a road segment. The costs of the road segments are given. There are three hospitals at B, D and E, and an accident happens at H. Which hospital should send an emergency vehicle?

- The emergency vehicle should be sent from hospital E .
- The vehicle should travel the path EGH , denoted as sequence of nodes (such as 'KLMN').
- 7 is the minimum cost of the travelled path.



Answer 1:

E

Correct!!

Answer 2:

EGH

Answer 3:

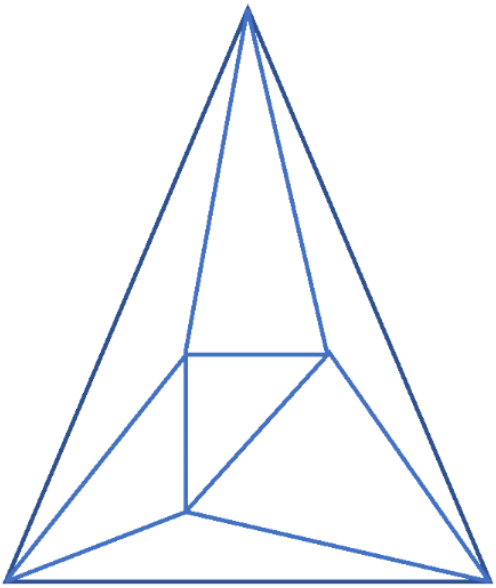
7

你仔细一点好不好，EGFH 才是最短

Question 2

0 / 0 pts

The following graph is Eulerian.



- (●) True
- ( ) False

Correct!!

可以有奇数 degree node ， 但的是两个，且为起终点

Question 3

0 / 0 pts

If a directed graph is represented by the following adjacency matrix, what is the indegree of node C?

```
  A B C D E
--------------------
A| 0 1 1 0 0
B| 0 0 1 1 0
C| 0 0 1 0 0
D| 0 0 0 0 1
E| 0 0 1 0 0
```

- 1
- 3
- 2
- 4 (selected)

Correct!!

WEEK6

Question 1

0 / 0 pts

Use the given formula to compute a Delaunay triangulation. Apply this formula for the given set of four points A (1,0), B (3,2), C (3,4), and D (0,1). Choose the initial triangle of A, B, C to start with. Compute the centre of the circumcircle of (A, B, C), and decide on your action how to add D to the triangulation. Your solution for the centre point is 0 and 3. Your solution for the radius of the circumcircle, down to two digits, is 3.16.

Note: In this formula the notation for points is the usual vector representation, i.e. p = (xp, yp)'.

The centre of a circumcircle -

$$\begin{aligned} \mathbf{m} &= \mathbf{p}_1 + \lambda(\mathbf{p}_2 - \mathbf{p}_1) + \mu(\mathbf{p}_3 - \mathbf{p}_1) \\ &= \mathbf{p}_1 + \lambda\mathbf{v} + \mu\mathbf{w} \end{aligned}$$

with

$$\lambda = 0.5 \frac{\begin{vmatrix} \mathbf{v}^T\mathbf{v} & \mathbf{v}^T\mathbf{w} \\ \mathbf{w}^T\mathbf{w} & \mathbf{w}^T\mathbf{w} \end{vmatrix}}{\begin{vmatrix} \mathbf{v}^T\mathbf{v} & \mathbf{v}^T\mathbf{w} \\ \mathbf{v}^T\mathbf{w} & \mathbf{w}^T\mathbf{w} \end{vmatrix}}$$

$$\mu = 0.5 \frac{\begin{vmatrix} \mathbf{v}^T\mathbf{v} & \mathbf{v}^T\mathbf{v} \\ \mathbf{v}^T\mathbf{w} & \mathbf{w}^T\mathbf{w} \end{vmatrix}}{\begin{vmatrix} \mathbf{v}^T\mathbf{v} & \mathbf{v}^T\mathbf{w} \\ \mathbf{v}^T\mathbf{w} & \mathbf{w}^T\mathbf{w} \end{vmatrix}}$$

Answer 1:

Correct!

0

Answer 2:

Correct!

3

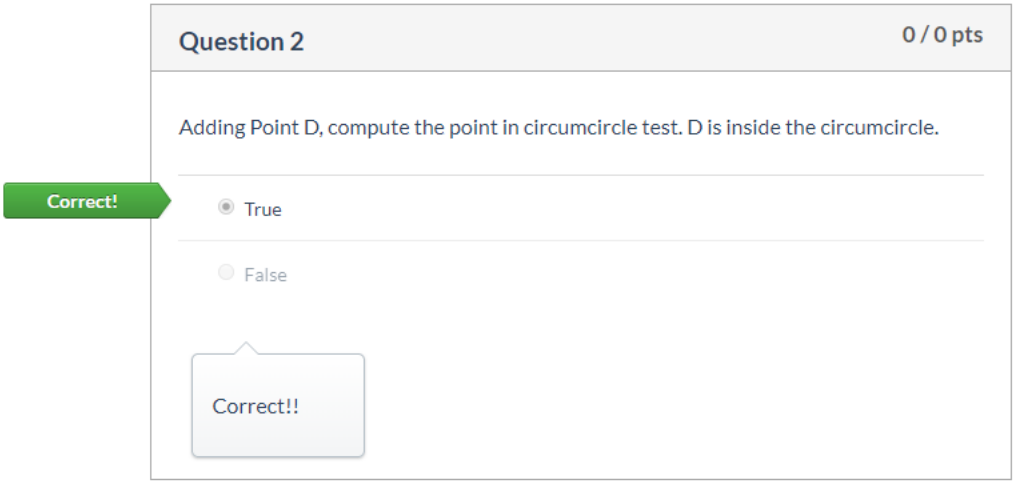
Answer 3:

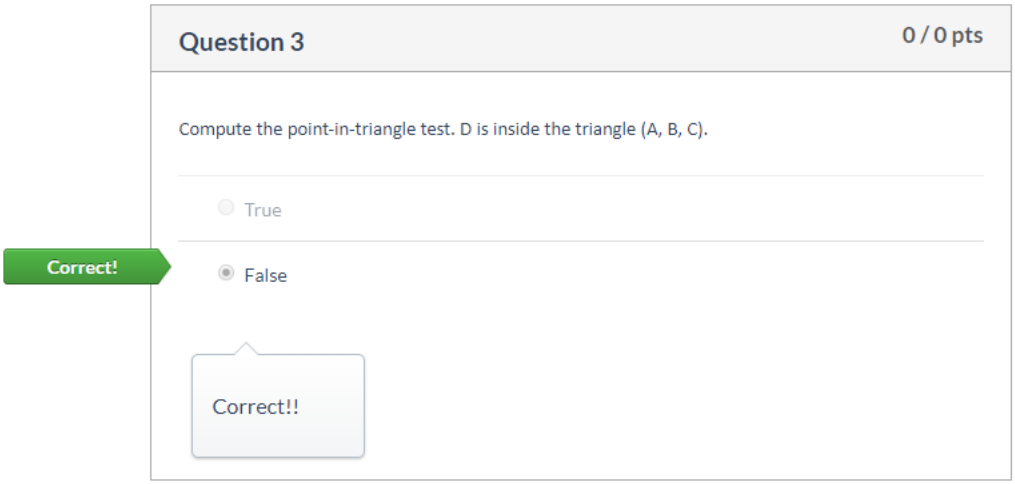
Correct Answer

3.16

Correct.

(Distance from the centre to one of A, B, or C)


Question 2
0 / 0 pts
Adding Point D, compute the point in circumcircle test. D is inside the circumcircle.
Correct!
True
False
Correct!!


Question 3
0 / 0 pts
Compute the point-in-triangle test. D is inside the triangle (A, B, C).
True
Correct!
False
Correct!!

WEEK 7

Question 1

0 / 0 pts

Arcs and areas are the examples of models at application domain level.

- True
- False

Correct!!

Question 2

0 / 0 pts

The 'I' in the ACID principles of database transaction indicates-

- Integrity
- Isolation
- Independency
- Interpolation

Correct!!

Question 3

0 / 0 pts

The following table is in normal form

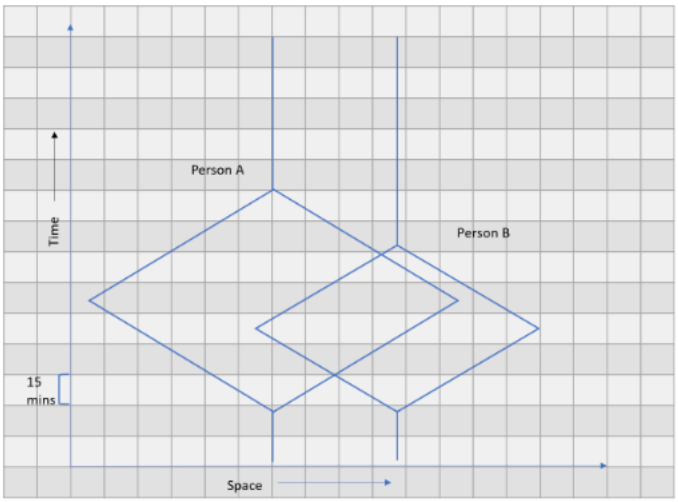
ID	x1	y1	x2	y2	x3	y3	Area
A	2	3	4	5	3	8	18
B	6	7	4	2	0	7	14.6

- True
- False

Correct!!

WWEK8

The following figure illustrates an example of two people – person A and person B trying to meet for lunch. From the figure find out the maximum duration of the lunch.



- 30 mins
- 37 mins
- 1 hr 30 mins
- 45 mins

rrect!

Correct!!

Question 2

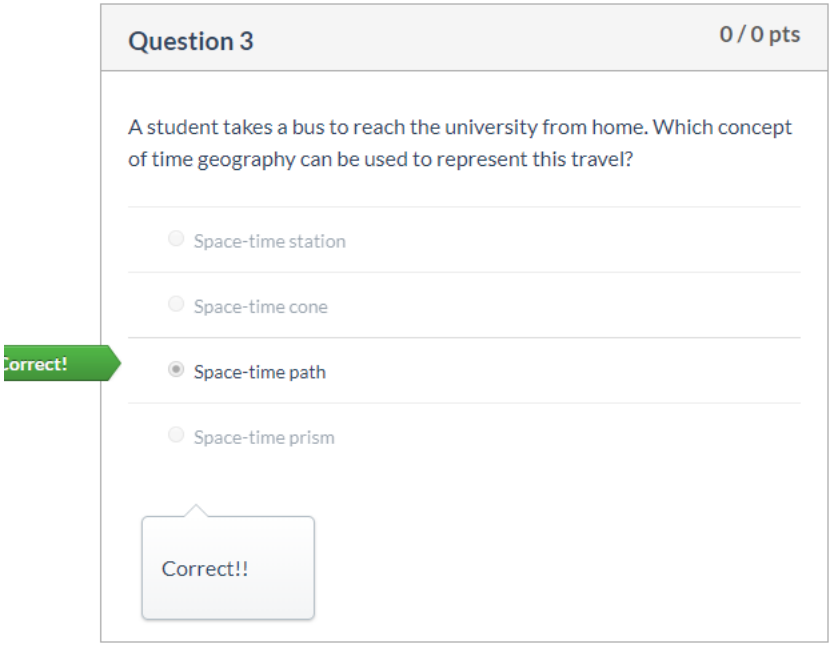
0 / 0 pts

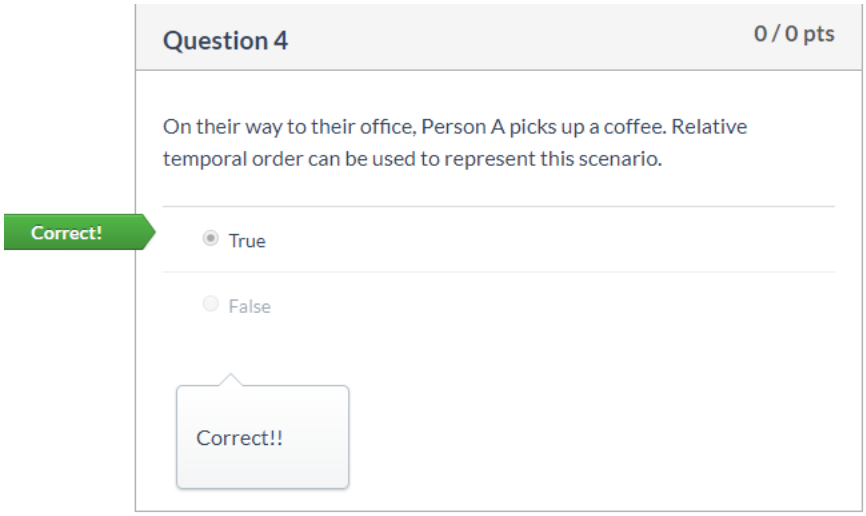
In the above example, which concept of time geography has been used?

- Space - time station
- Space - time cone
- Space - time prism
- Space - time path

Correct!

Correct!!


Question 3
0 / 0 pts
A student takes a bus to reach the university from home. Which concept of time geography can be used to represent this travel?
Space-time station
Space-time cone
Correct!
Space-time path
Space-time prism
Correct!!


Question 4
0 / 0 pts
On their way to their office, Person A picks up a coffee. Relative temporal order can be used to represent this scenario.
Correct!
True
False
Correct!!

WEEK 9

Question 1

0 / 0 pts

A, B, and C are simple regions - what is A to C if (A is near B) and (B is inside C)?

Correct!

- (•) disjoint, meet, overlap, covered by, inside
- ( ) overlap, covered by, inside.
- ( ) covered by, inside.
- ( ) inside

Correct!!

Question 2

0 / 0 pts

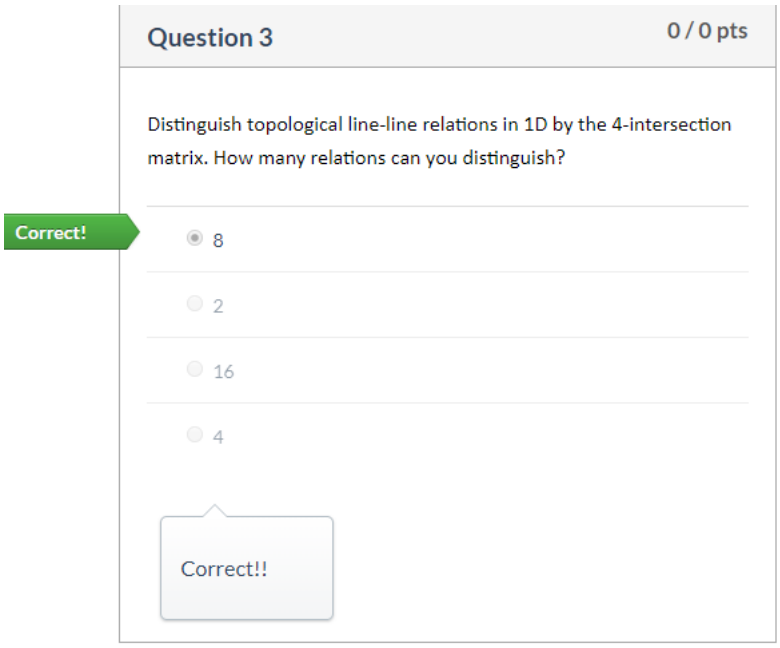
What are topological relations:

- ( ) relations that can be transformed by topological transformations
- ( ) all of these
- ( ) a term synonym to "qualitative relations"

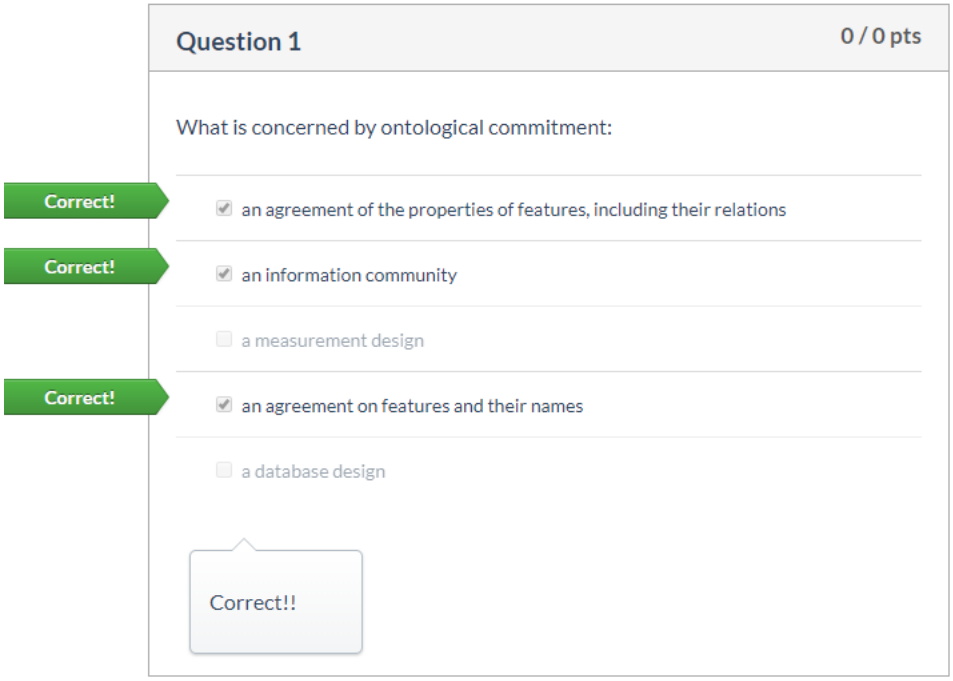
Correct!

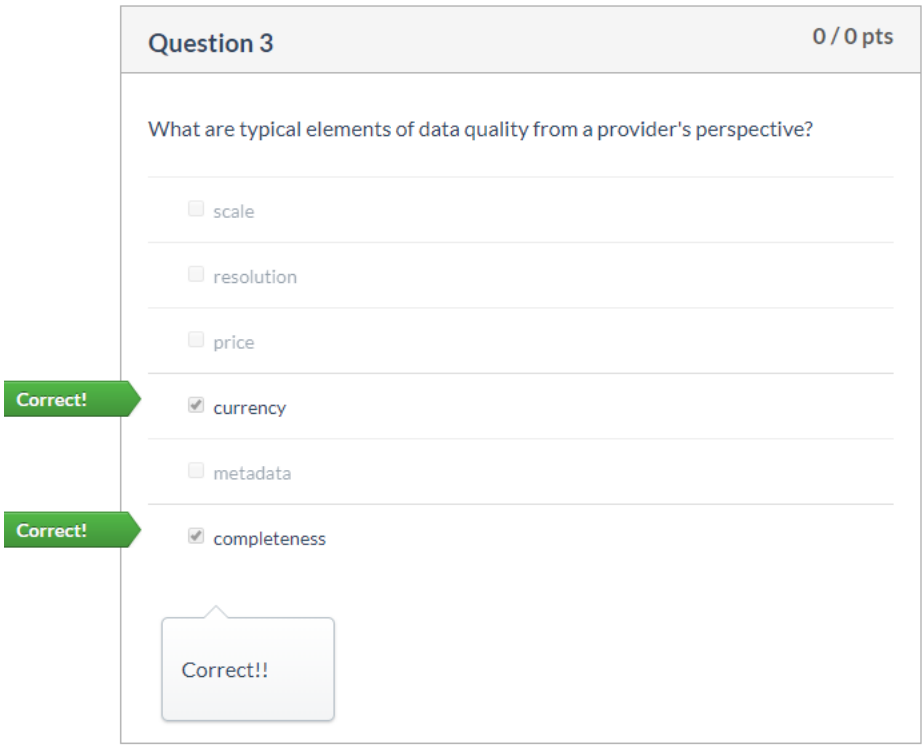
- (•) relations that are invariant under topological transformations

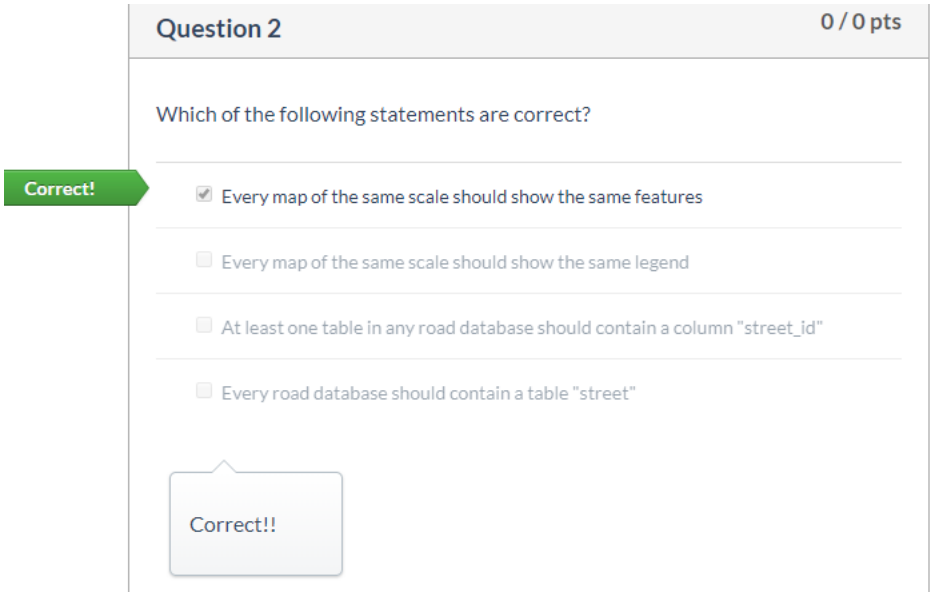
Correct!!


Question 3
0 / 0 pts
Distinguish topological line-line relations in 1D by the 4-intersection matrix. How many relations can you distinguish?
Correct!
8
2
16
4
Correct!!

WEEK10


Question 1
0 / 0 pts
What is concerned by ontological commitment:
Correct!
an agreement of the properties of features, including their relations
Correct!
an information community
a measurement design
Correct!
an agreement on features and their names
a database design
Correct!!





LECT 里全错，他还没改

WEEK11

Question 1

0 / 0 pts

Your company plans to develop a bridge of an estimated cost of 6 million dollars ($6,000,000) of estimated development time of one year. After the year, the bridge will be opened for lightweight vehicles and small trucks. The lightweight vehicles and trucks have to pay $5 and $10 toll respectively for each usage of the bridge. If 15,000 lightweight vehicles and 2,500 trucks pass the bridge in every month, in which year will the company reach break-even?

You Answered

- (•) 5
- ( ) 4
- ( ) 3

Correct Answer

- ( ) 6

Incorrect. Please revisit the slides - cost and benefit.

Question 2

0 / 0 pts

Suppose your company decided to allow heavy-duty vehicles. The heavy-duty vehicles have to pay $50 in each pass and 1000 heavy-duty vehicles pass in every month. But, there is a structural fault detected that cost an additional $1,500,000 after two years of construction. In this new scenario, in which year will the company reach break-even?

You Answered

- (•) 4

4. You selected this answer.

- ( ) Company can not make break-even
- ( ) 6

Correct Answer

- ( ) 5

Incorrect. Please revisit the slides - cost and benefit.

Question 3

0 / 0 pts

Identify possible indirect benefit(s) of this benefit-cost analysis for the company's decision making.

- [ ] Revenue
- [ ] External benefits
- [ ] Better decisions
- [x] Better understanding of problems

Correct!

Correct!!

Question 4

0 / 0 pts

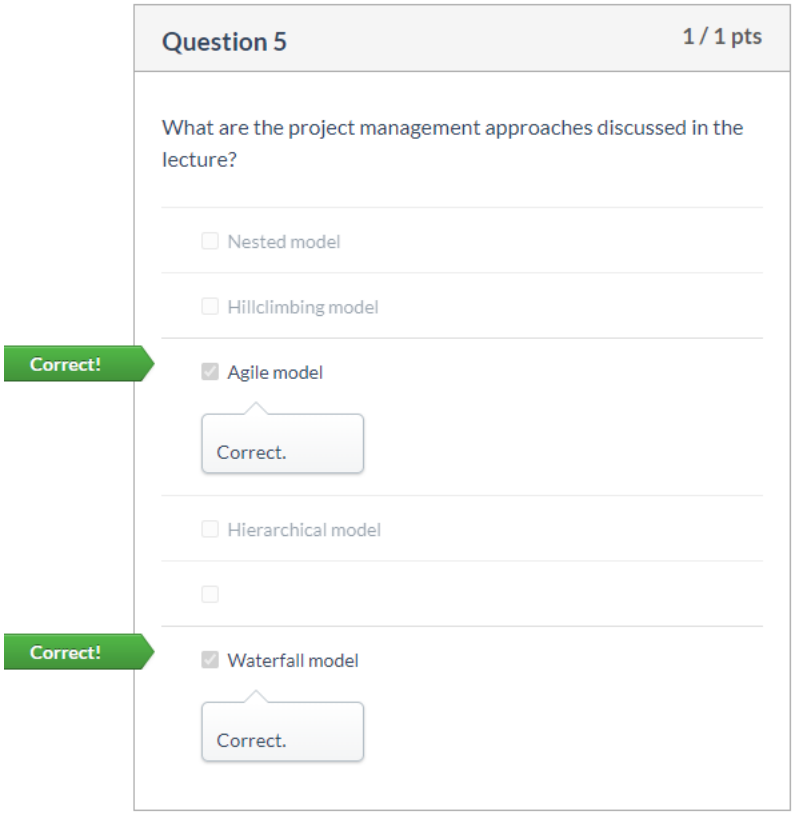
Identify possible indirect cost(s) in this construction work

- [ ] Maintenance
- [ ] Overhead
- [x] Reputation
- [ ] Construction

Correct!

Reputation. You selected this answer. T

Correct!!



One of the four categories in URISA' s Code of Ethics for GIS professionals is - Obligations to Individuals in Society.

True

Obligations to Society includes – deliver quality work, be honest in representations.
false

A principle of data privacy is – shared private information can remain confidential.

True