

Example Exam Questions results for Test student

Score for this attempt: **15** out of 55 *

Submitted 12 Nov at 8:21

This attempt took 1 minute.

Question 1

5 / 5 pts

Given the following recursive definition.

$$T(n) = \begin{cases} 5 & \text{if } 1 \leq n \leq 15 \\ 2n + 4 \cdot T(\lceil n/2 \rceil + 2) & \text{if } n > 15 \end{cases}$$

Pick the correct order of magnitude for $T(n)$. Select "non of the other answers" if the correct order of magnitude is not listed.

☐ non of the other answers

☒ $\Theta(n^2)$

☐ $\Theta(n \log n)$

☐ $\Theta(n^3)$

Correct!

Question 2

5 / 5 pts

Consider the sequential insertion of the elements 5. 3. 7. 23. 2. 6. 11.

68

You are currently logged in to student view

Resetting the test student will clear all history for this student and allow you to view the course as a brand new student.

[Reset student](#)

[Leave student view](#)

TTHTTTTTTHTHTTTTTHTTHTTHTTTHTTTTH

What is the height of element 23 in the resulting skip list?

Correct!

☒ 5

☐ 4

☐ 3

☐ 2

Question 3

5 / 5 pts

68

You are currently logged in to student view

Resetting the test student will clear all history for this student and allow you to view the course as a brand new student.

[Reset student](#)

[Leave student view](#)

Consider the following graphs for $n \geq 5$

$$G_1 = (V_1, E_1), V_1 = \{v_1, \dots, v_n\}, E_1 = \{(v_i, v_{i+1}) \mid 1 \leq i \leq n-1\}$$

$$G_2 = (V_2, E_2), V_2 = \{v_1, \dots, v_n\}, E_2 = \{(v_i, v_{i+1}) \mid 1 \leq i \leq n-1\} \cup \{(v_1, v_n)\}$$

$$G_3 = (V_3, E_3), V_3 = \{v_1, \dots, v_n\}, E_3 = \{(v_i, v_{i+1}) \mid 1 \leq i \leq n-1\} \cup \{(v_1, v_{n-1})\}$$

$$G_4 = (V_4, E_4), V_4 = \{v_1, \dots, v_n\}, E_4 = \{(v_i, v_{i+1}) \mid 1 \leq i \leq n-2\} \cup \{(v_1, v_{n-1})\}$$

Select all graphs that do not contain a cycle.

☐ G2

☐ G3

Correct!

☒ G1

Correct!

☒ G4

Unanswered

Question 4

Not yet graded / 20 pts

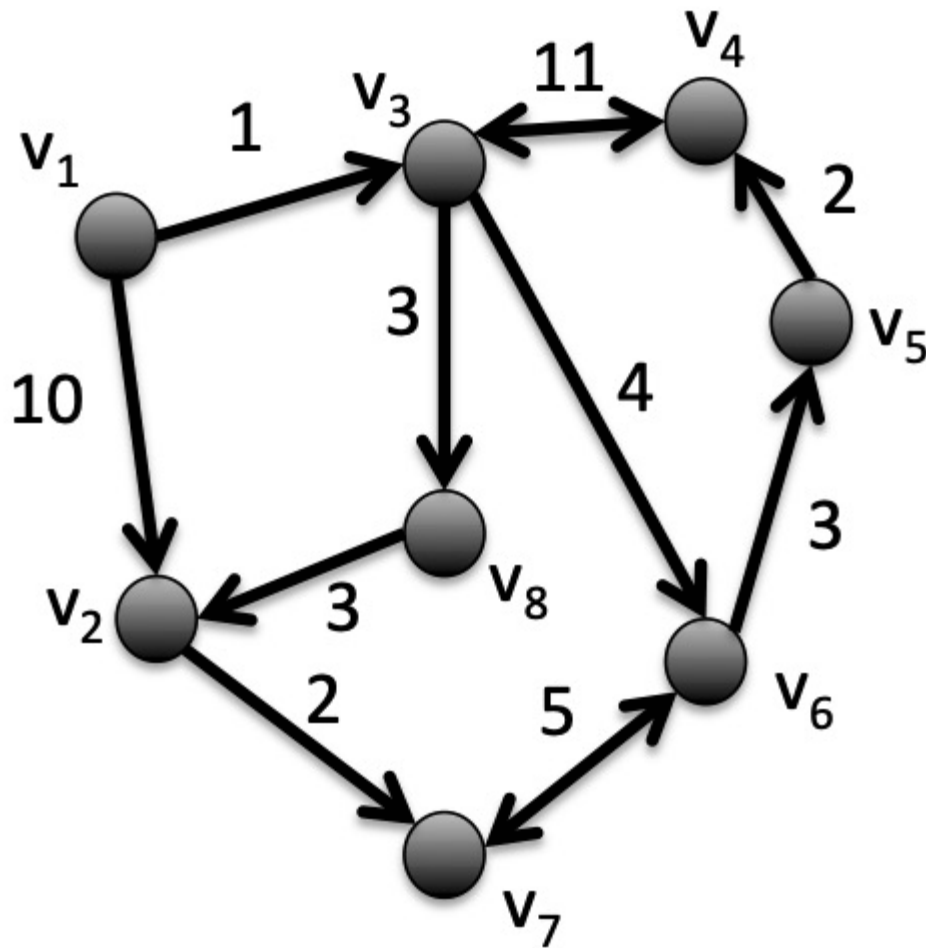
Consider the following graph:

68 You are currently logged in to student view

Resetting the test student will clear all history for this student and allow you to view the course as a brand new student.

[Reset student](#)

[Leave student view](#)



Solve the single-source-shortest path problem for the start node v_1 using Dijkstra's algorithm. List for each iteration which nodes become scanned and which edges are relaxed.

Your answer:

Unanswered

Question 5

Not yet graded / 20 pts

68

You are currently logged in to student view

Resetting the test student will clear all history for this student and allow you to view the course as a brand new student.

[Reset student](#)

[Leave student view](#)

Your answer:

Quiz score: **15** out of 55

68

You are currently logged in to student view

Resetting the test student will clear all history for this student and allow you to view the course as a brand new student.

Reset student

Leave student view