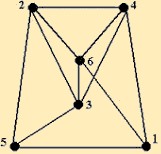
**Лабораторная работа 7.**

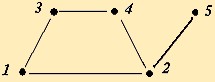
**Основные понятия теории графов.**

Составьте матрицы инцидентности и смежности для следующих графов:

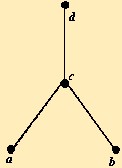
1.



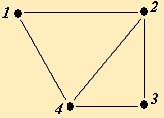
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Матрица инцидентности | | | | | | | | | | | | | | | | | |
|  | a | | b | c | | d | e | | f | | g | h | | i | k | | l |
| 1 | 1 | | 1 | 1 | | 0 | 0 | | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| 2 | 0 | | 0 | 0 | | 1 | 1 | | 1 | | 1 | 0 | | 0 | 0 | | 0 |
| 3 | 0 | | 0 | 0 | | 1 | 0 | | 0 | | 0 | 1 | | 1 | 1 | | 0 |
| 4 | 1 | | 0 | 0 | | 0 | 1 | | 0 | | 0 | 1 | | 0 | 0 | | 1 |
| 5 | 0 | | 1 | 0 | | 0 | 0 | | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| 6 | 0 | | 0 | 1 | | 0 | 0 | | 0 | | 1 | 0 | | 0 | 1 | | 1 |
|  | |  | | | Матрица смежности | | | | | | | |  | | |  | |
|  | | 1 | | | 2 | | | 3 | | 4 | | | 5 | | | 6 | |
| 1 | | 0 | | | 0 | | | 0 | | 1 | | | 1 | | | 1 | |
| 2 | | 0 | | | 0 | | | 1 | | 1 | | | 1 | | | 1 | |
| 3 | | 0 | | | 1 | | | 0 | | 1 | | | 1 | | | 1 | |
| 4 | | 1 | | | 1 | | | 1 | | 0 | | | 0 | | | 1 | |
| 5 | | 1 | | | 1 | | | 1 | | 0 | | | 0 | | | 0 | |
| 6 | | 1 | | | 1 | | | 1 | | 1 | | | 0 | | | 0 | |



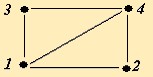
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Матрица инцидентности | | | | | |
|  | a | b | c | d | e |
| 1 | 1 | 1 | 0 | 0 | 0 |
| 2 | 1 | 0 | 1 | 1 | 0 |
| 3 | 0 | 1 | 0 | 0 | 1 |
| 4 | 0 | 0 | 1 | 0 | 1 |
| 5 | 0 | 0 | 0 | 1 | 0 |
| Матрица смежности | | | | | |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0 | 1 | 1 | 0 | 0 |
| 2 | 1 | 0 | 0 | 1 | 1 |
| 3 | 1 | 0 | 0 | 1 | 0 |
| 4 | 0 | 1 | 1 | 0 | 0 |
| 5 | 0 | 1 | 0 | 0 | 0 |



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Матрица инцидентности | | | | |
|  | w | x | y | z |
| a | 1 | 0 | 0 | 0 |
| b | 0 | 1 | 0 | 0 |
| c | 1 | 1 | 1 | 0 |
| d | 0 | 0 | 1 | 0 |
| Матрица смежности | | | | |
|  | a | b | c | d |
| a | 0 | 0 | 1 | 0 |
| b | 0 | 0 | 1 | 0 |
| c | 1 | 1 | 0 | 1 |
| d | 0 | 0 | 1 | 0 |



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Матрица инцидентности | | | | | | | | | |
|  | v | | w | | x | | y | | z |
| 1 | 1 | | 1 | | 0 | | 0 | | 0 |
| 2 | 1 | | 0 | | 1 | | 1 | | 0 |
| 3 | 0 | | 0 | | 0 | | 1 | | 1 |
| 4 | 0 | | 1 | | 1 | | 0 | | 1 |
| Матрица смежности | | | | | | | | | |
|  | | 1 | | 2 | | 3 | | 4 | |
| 1 | | 0 | | 1 | | 0 | | 1 | |
| 2 | | 1 | | 0 | | 1 | | 1 | |
| 3 | | 0 | | 1 | | 0 | | 1 | |
| 4 | | 1 | | 1 | | 1 | | 0 | |



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Матрица инцидентности | | | | | | | | | |
|  | v | | w | | x | | y | | z |
| 1 | 1 | | 1 | | 1 | | 0 | | 0 |
| 2 | 1 | | 0 | | 0 | | 1 | | 0 |
| 3 | 0 | | 1 | | 0 | | 0 | | 1 |
| 4 | 0 | | 0 | | 1 | | 1 | | 1 |
| Матрица смежности | | | | | | | | | |
|  | | 1 | | 2 | | 3 | | 4 | |
| 1 | | 0 | | 1 | | 1 | | 1 | |
| 2 | | 1 | | 0 | | 0 | | 1 | |
| 3 | | 1 | | 0 | | 0 | | 1 | |
| 4 | | 1 | | 1 | | 1 | | 0 | |