

**Algorithm Design**  
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**Solution of Exercise C-6.13**

For each vertex  $v$ , perform a modified BFS traversal starting at  $v$  that stops as soon as level 4 is computed.

Alternatively, for each vertex  $v$ , call method  $\text{DFS}(v, 4)$  given below, which is a modified DFS traversal starting at  $v$ :

**Algorithm**  $\text{DFS}(v, i)$ :

```
if  $i > 0$  and  $v$  is not marked then  
  Mark  $v$ .  
  Print  $v$ .  
  for all vertices  $w$  adjacent to  $v$  do  
     $\text{DFS}(w, i - 1)$ .
```