## Exercise-set 10.
## Solutions

1. Yes: $e$ must be in the minimum cut.

2. True (we can use augmenting paths of smaller values).

3. The $s, t$-cut with $X = V \setminus \{t\}$ is a minimum $s, t$-cut.

4. The min $s, w$-cut has capacity at least 100.

5. a) True.
   b) True.
   c) False.
   d) We get the same answers as for a), b), c).

6. a) True.
   b) True.

7. a) 3, 3,
   b) 3, 3,
   c) 4, 4.

8. a) 5,
   b) 7.

9. For any two vertices we need at least 3 edges to cover all the paths between them.