

## 6689 Decision Mathematics D1

1. (b)  $D - 2 = A - 3 = F - 6 = E - 1$   
(c)  $A = 3$ , (B unmatched),  $C = 4$ ,  $D = 2$ ,  $E = 5$ ,  $F = 6$   
(d)  $A = 3$ ,  $B = 4$ ,  $C = 5$ ,  $D = 2$ ,  $E = 1$ ,  $F = 6$
3. (a) Shortest route: A–B–F–D–G–H–J, Length: 22 (km)  
(c) Shortest route: A–B–F–D–G–E–G–H–J, Length: 26 (km)
5. (c) 98 (km) (d) (i)  $\frac{m}{2}$  (ii)  $n - 1$  (iii)  $m \geq 2(n - 1)$
6. (c)  $V\left(\frac{32}{5}, \frac{8}{5}\right)$  (d)  $\frac{88}{5}$  (e) (7, 7) 35 (f)  $k = \frac{5}{3}$
7. (c) 3 workers