

Paper Reference(s)

**6689**

**Edexcel GCE**

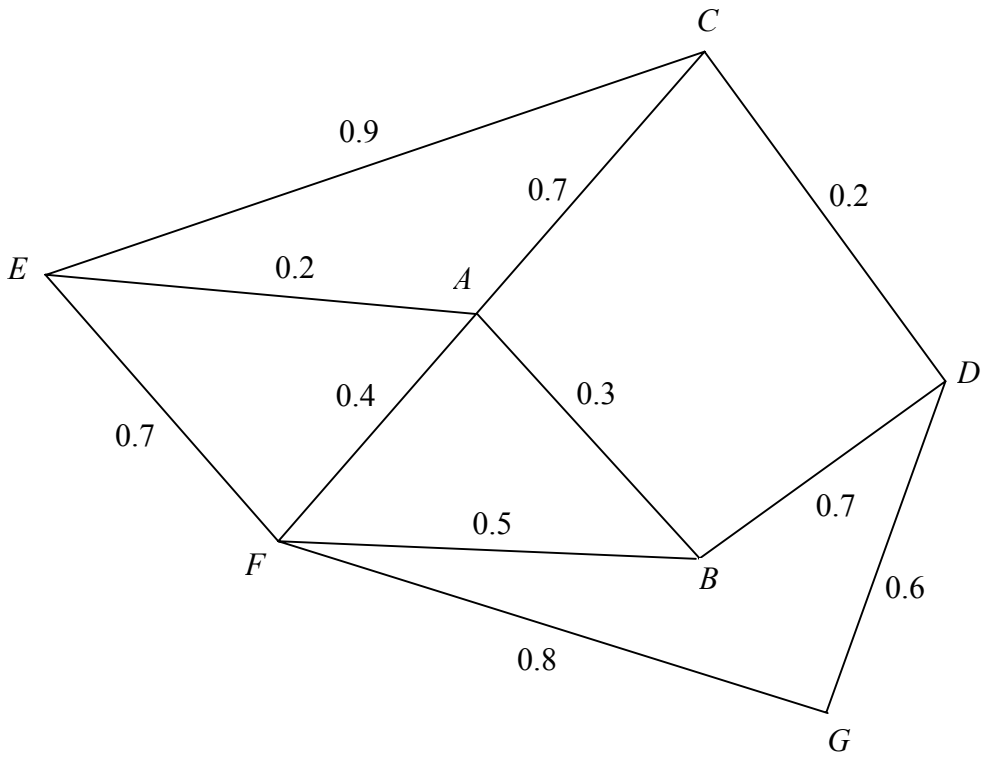
**Decision Mathematics D1**

**Advanced/Advanced Subsidiary**

**Tuesday 4 November 2003 – Morning**

**Answer Book**

1.



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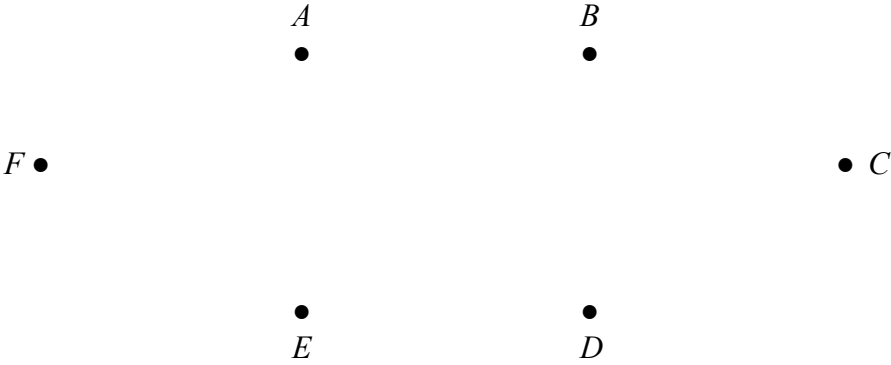
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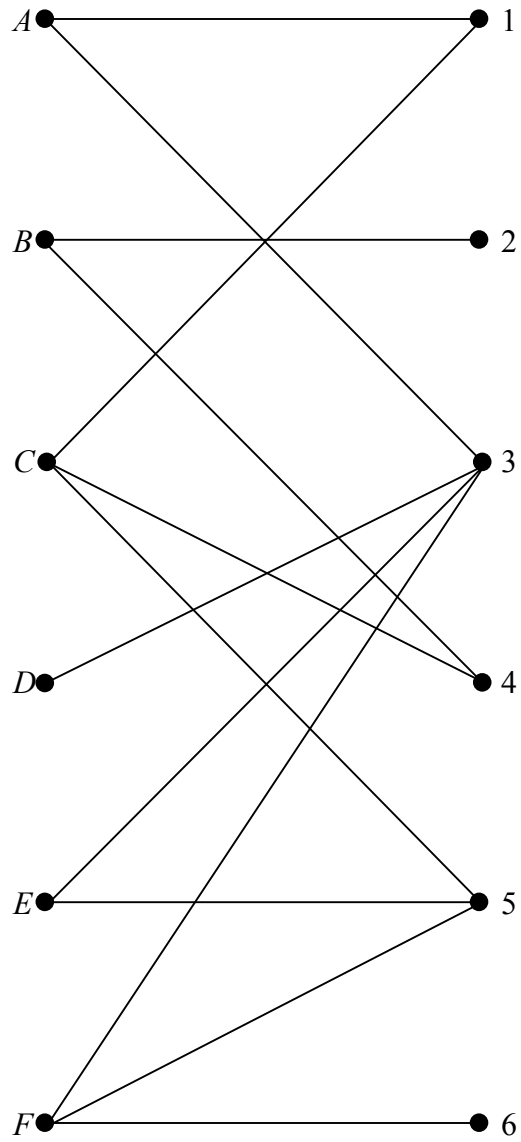
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2. (a)



(b)

3.



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## 3. continued

4. (a)

(b)

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5.

[illegible]

6. ....

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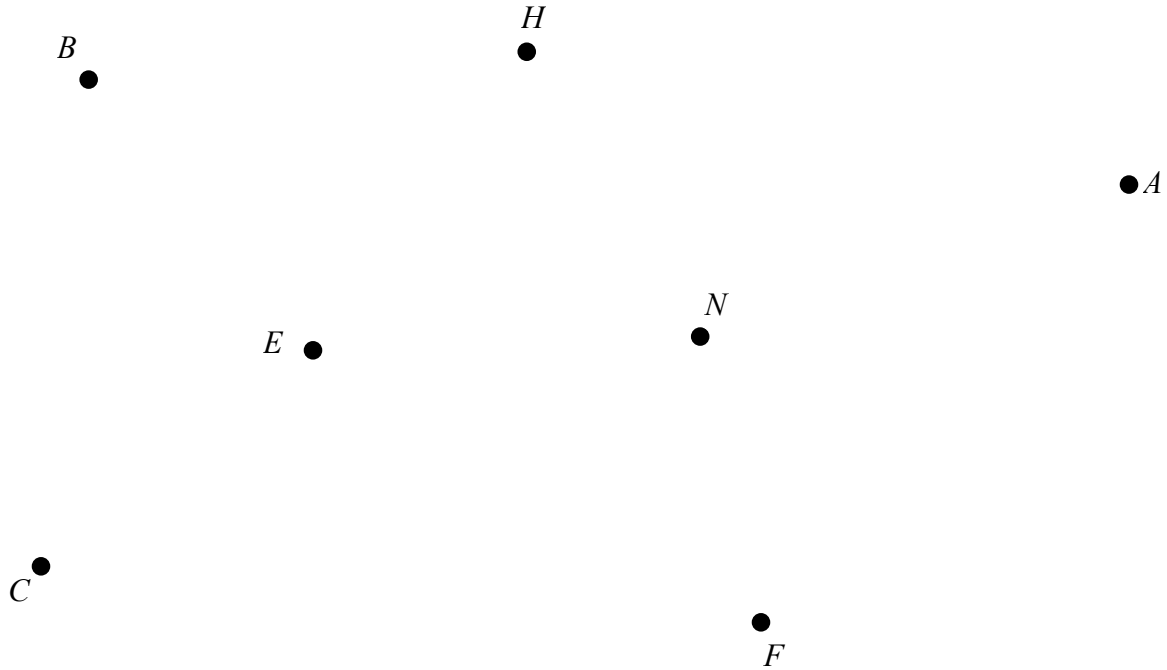
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(c)

Diagram 1

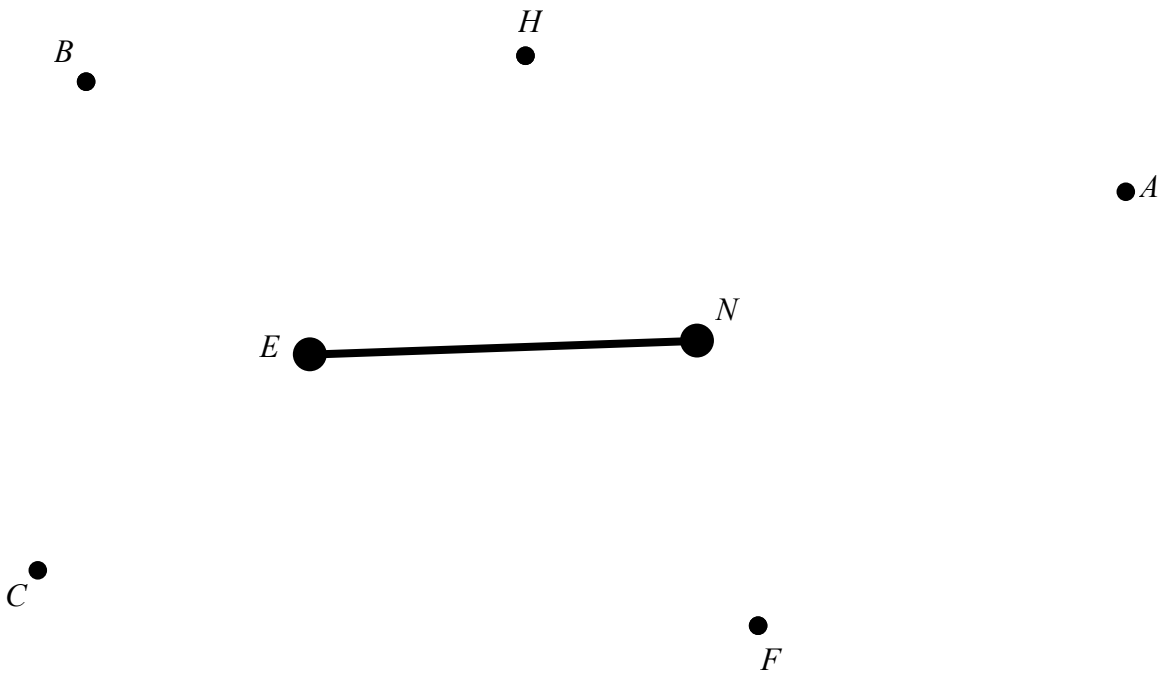


Order arcs included: .....

Length of minimum spanning tree: .....

(d)

Diagram 2

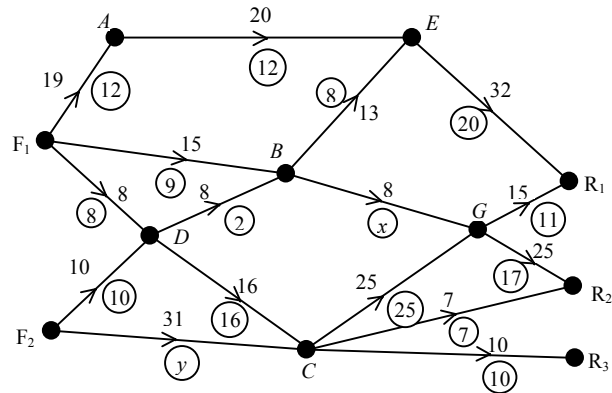


New cable needed: .....

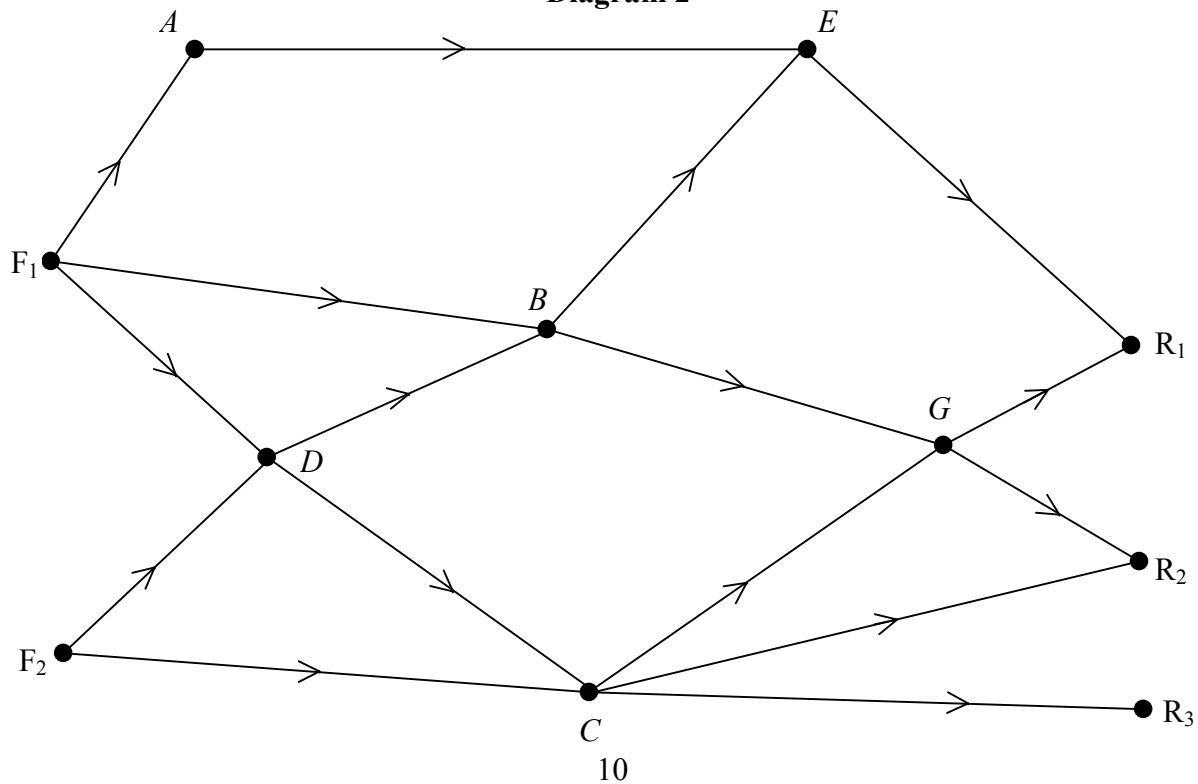
7. (a)  $x = \dots\dots\dots$   $y = \dots\dots\dots$

(b)

**Diagram 1**

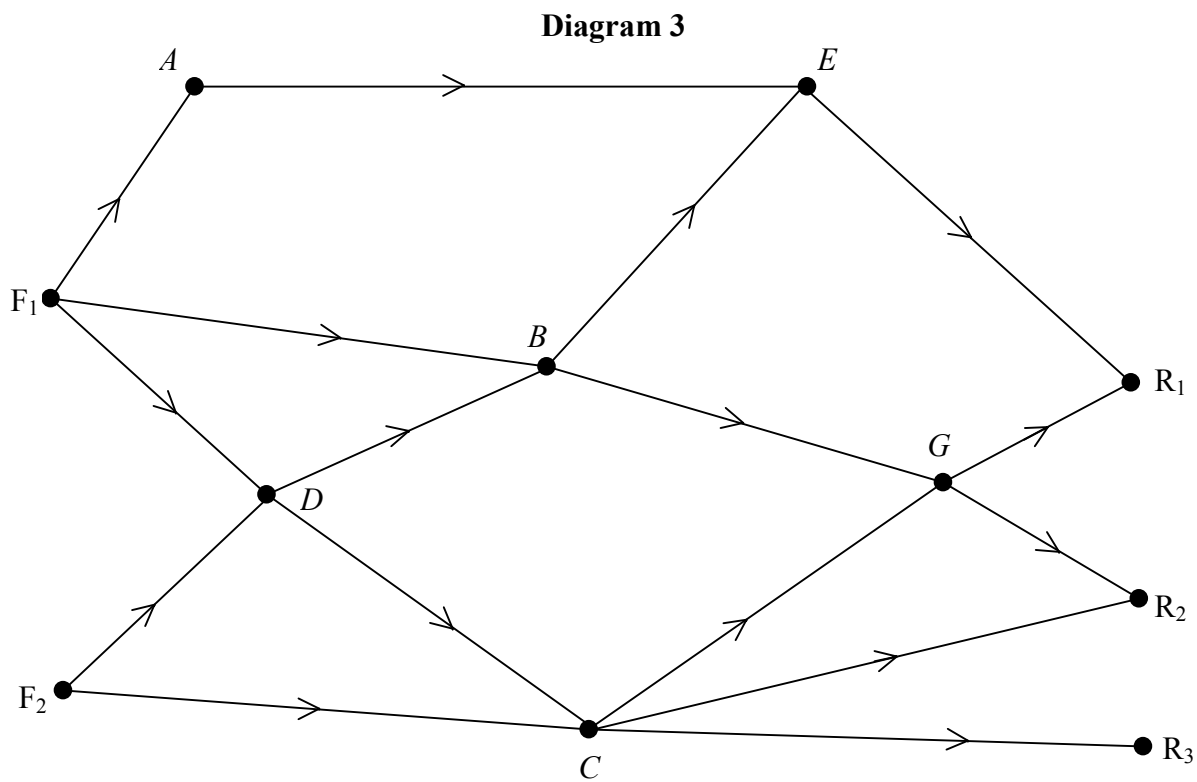


**Diagram 2**



(c)

(d)



Max Flow = .....

(e)

8. ....

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(c) Profit on small lamp = ..... Euros

Basic variable	$x$	$y$	$z$	$r$	$s$	Value
$r$	3	5	6	1	0	50
$s$	1	2	4	0	1	24
$P$	-1	-3	-4	0	0	0

*You may not need to use all these tableaux*

Basic variable	$x$	$y$	$z$	$r$	$s$	Value

Basic variable	$x$	$y$	$z$	$r$	$s$	Value



**8. continued**

[illegible]

**END**