

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Friday 26 May 2023 – Afternoon

AS Level Further Mathematics B (MEI)

Y413/01 Modelling with Algorithms

Printed Answer Booklet

**Time allowed: 1 hour 15 minutes
plus your additional time allowance**

YOU MUST HAVE:

**Question Paper Y413/01 (with this document)
the Formulae Booklet for Further Mathematics B (MEI)
a scientific or graphical calculator**

Please write clearly in black ink.

Centre number

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Candidate number

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First name(s) _____

Last name _____

READ INSTRUCTIONS OVERLEAF



INSTRUCTIONS

Use black ink. You can use an HB pencil, but only for graphs and diagrams.

Write your answer to each question in the space provided in the PRINTED ANSWER BOOKLET. If you need extra space use the lined pages at the end of the Printed Answer Booklet. The question numbers must be clearly shown.

Answer ALL the questions.

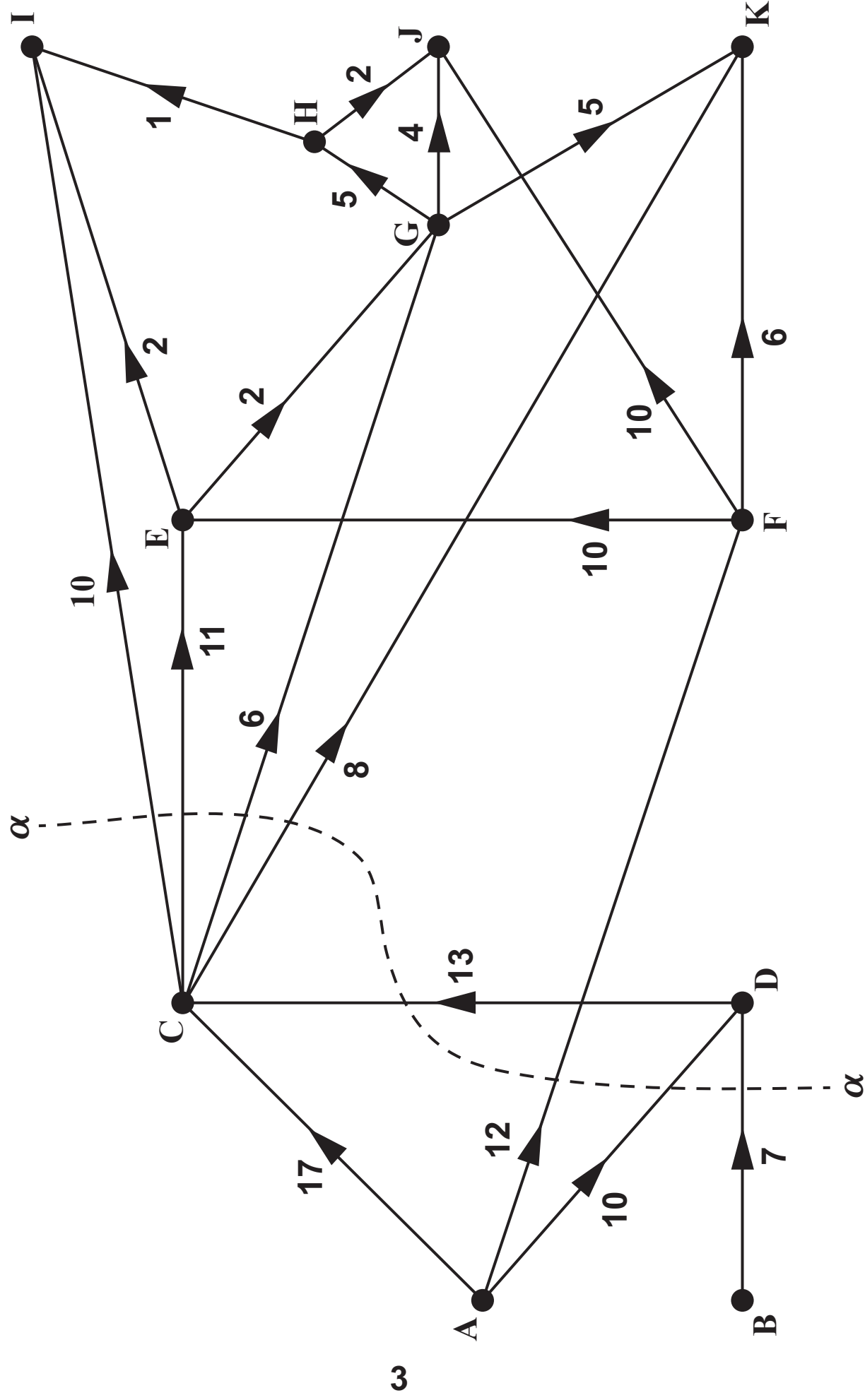
Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.

Give your final answers to a degree of accuracy that is appropriate to the context.

ADVICE

Read each question carefully before you start your answer.

1(a)



1(b)

1(c)

[illegible]

2(a)

2(b)(i)

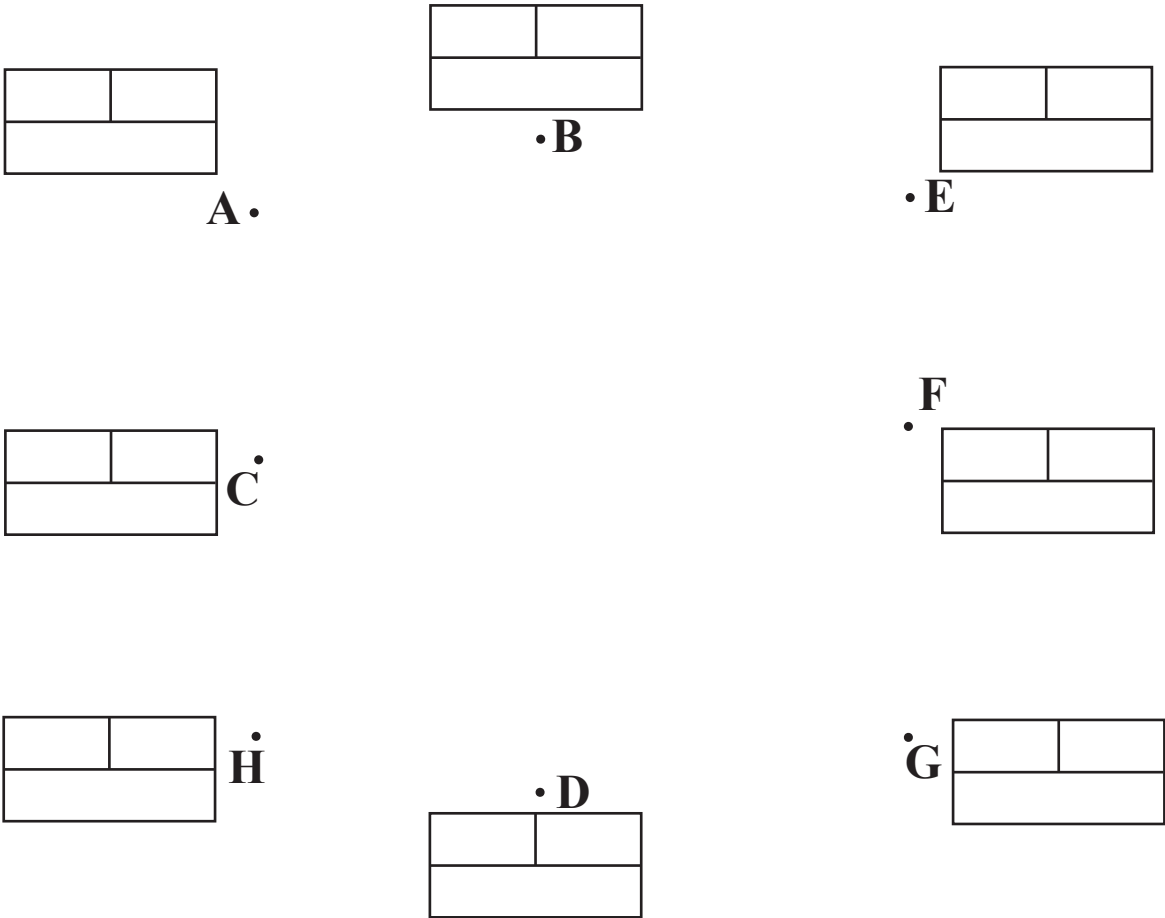
Key:

Order of labelling

Working values

(do not cross out)

Label



Length of quickest route from A to H =

2(b)(ii)

2(c)

3(a)

17 15 18 9 23 20 14 12 25 11

[illegible]

3(b)(i)

3(b)(ii)

[illegible]

This image shows a blank sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

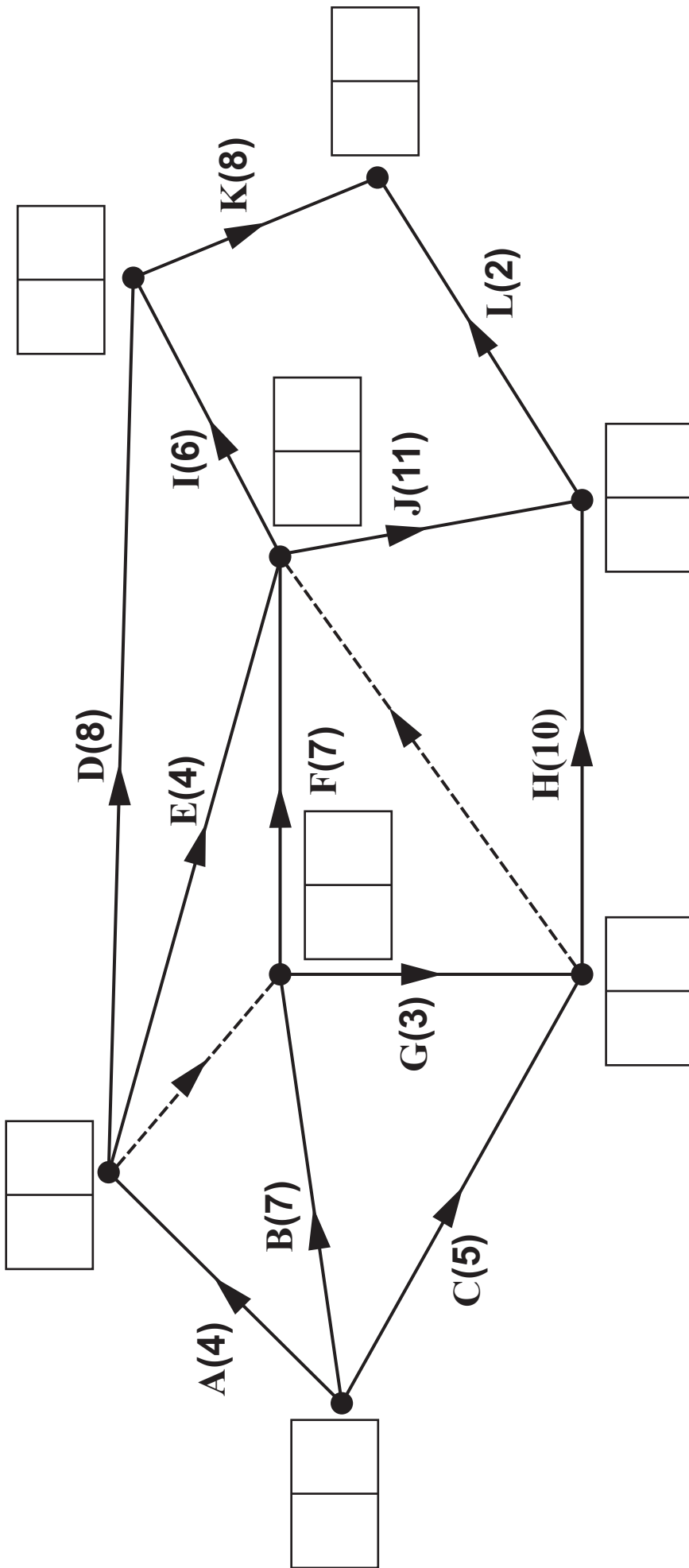
3(d)(ii)

4(a)

Activity	Immediate Predecessor(s)
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	
L	

4(b) **Minimum completion time =** _____

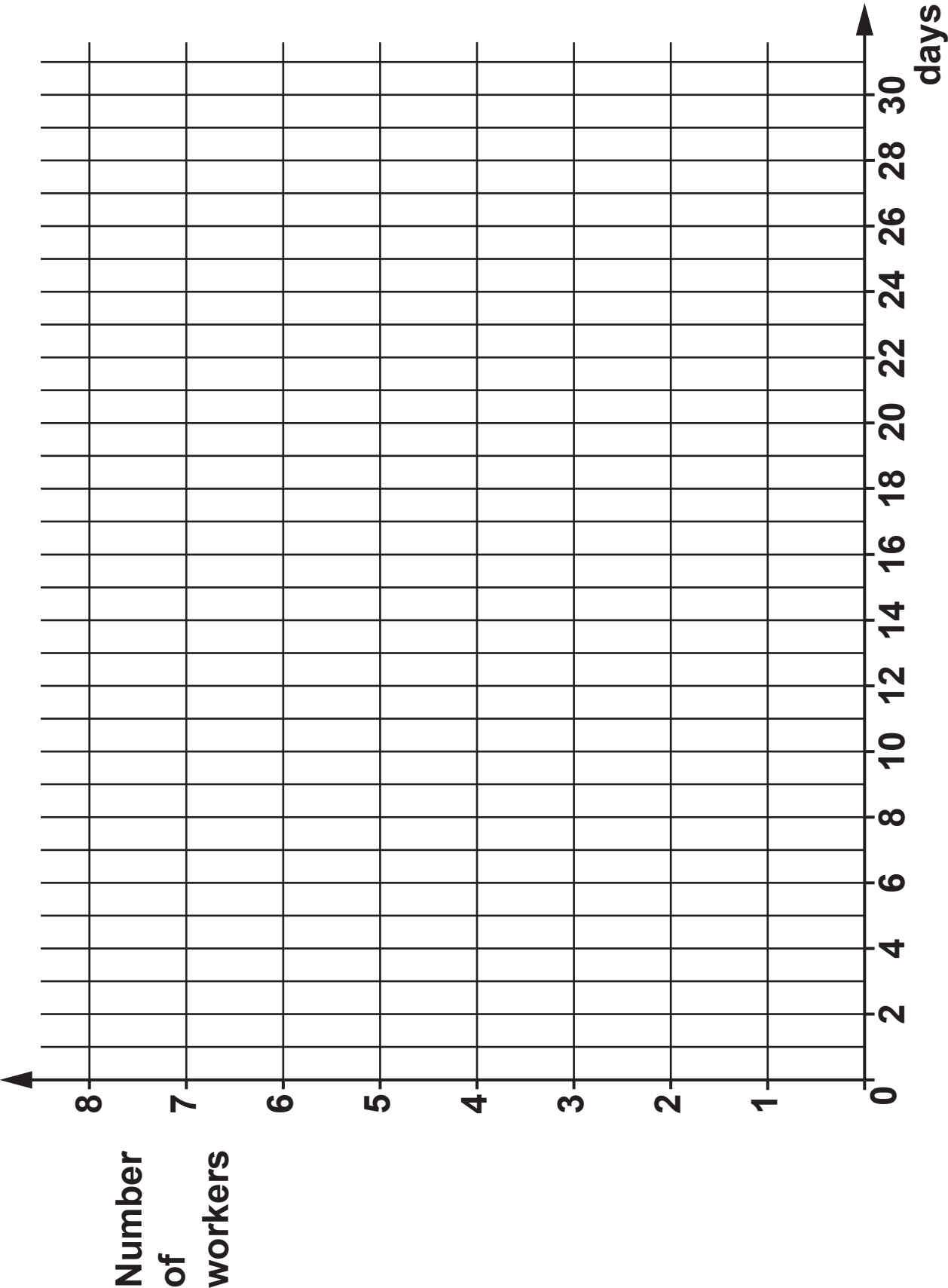
Critical activities: _____



4(c)

4(d)(i)

There is a spare copy of this graph on page 25



4(d)(ii)

5(a)

5(b)

5(c)

[illegible]

[illegible]

[illegible]

[illegible]

<i>P</i>	<i>x</i>	<i>y</i>	<i>s</i> ₁	<i>s</i> ₂	<i>s</i> ₃	<i>s</i> ₄	RHS

6(b)

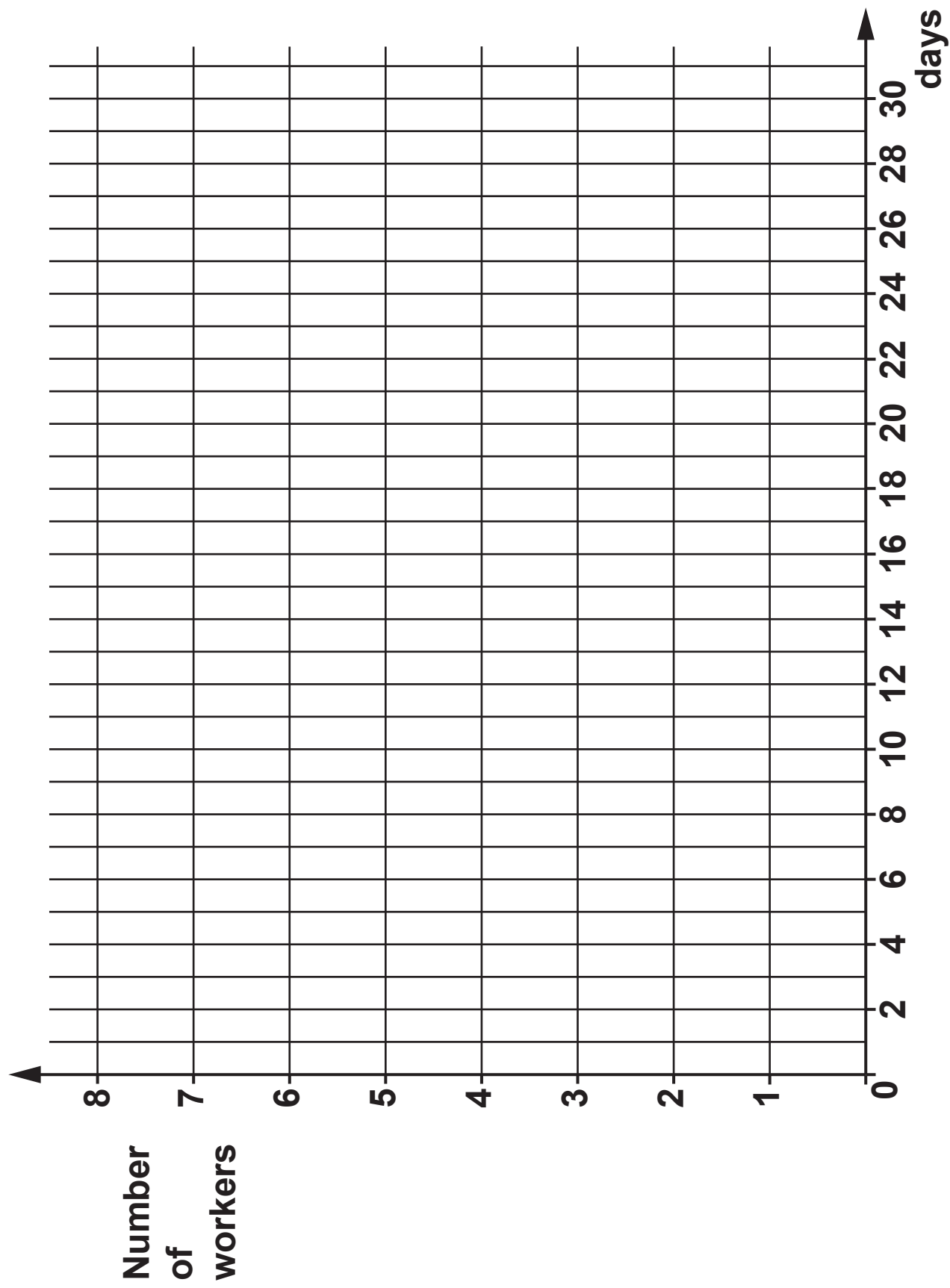
<i>P</i>	<i>x</i>	<i>y</i>	<i>s</i> ₁	<i>s</i> ₂	<i>s</i> ₃	<i>s</i> ₄	RHS

spare copy of tableau

<i>P</i>	<i>x</i>	<i>y</i>	<i>s</i> ₁	<i>s</i> ₂	<i>s</i> ₃	<i>s</i> ₄	RHS

[illegible]

4(d)(i) Spare copy of graph for Q4(d)(i)



ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).



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