



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/05**

Paper 5 (Core)

**For Examination from 2010**

SPECIMEN MARK SCHEME

**1 hour**

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**MAXIMUM MARK: 24**

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This document consists of **4** printed pages.



**TYPES OF MARK**

- **M** marks are given for a correct method.
- **A** marks are given for an accurate answer following a correct method.
- **B** marks are given for a correct statement or step.
- **D** marks are given for clear and appropriately accurate drawing.
- **P** marks are given for accurate plotting of points.
- **E** marks are given for correctly explaining or establishing a given result.
- **C** marks are given for clear communication (Papers 5 and 6 only).
- **R** marks are given for appropriate reasoning (Papers 5 and 6 only).

**ABBREVIATIONS**

- ft Follow through
- oe Or equivalent
- soi Seen or implied
- www Without wrong working

<b>1</b> <b>(a)</b>  <b>(b)</b>	$\frac{3}{24} + \frac{4}{24} = \frac{7}{24}$ $\frac{2}{12} + \frac{3}{12} = \frac{5}{12}$	AR1  AR1	(both accuracy & reasons are required)
<b>2</b> <b>(a)</b> <b>(i)</b>  <b>(ii)</b>  <b>(iii)</b>  <b>(b)</b>   <b>(c)</b>	$\frac{1}{3} + \frac{1}{6} = \frac{2}{6} + \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$ $\frac{1}{4} + \frac{1}{12} = \frac{3}{12} + \frac{1}{12} = \frac{4}{12} = \frac{1}{3}$ $\frac{1}{5} + \frac{1}{20} = \frac{4}{20} + \frac{1}{20} = \frac{5}{20} = \frac{1}{4}$ $\frac{1}{5} = \frac{1}{6} + \frac{1}{30}$ $\frac{1}{6} = \frac{1}{7} + \frac{1}{42}$ $\frac{1}{7} = \frac{1}{8} + \frac{1}{56}$ $\frac{1}{99} = \frac{1}{100} + \frac{1}{9900}$	R2     B2   B1	       (B1 or two correct)
<b>3</b> <b>(a)</b>  <b>(b)</b> <b>(i)</b>  <b>(ii)</b>  <b>(c)</b>	$2 \times \frac{1}{3} = 2 \left( \frac{1}{4} + \frac{1}{12} \right)$ $\text{So } \frac{2}{3} = \frac{2}{4} + \frac{2}{12} = \frac{1}{2} + \frac{1}{6}$ $\frac{2}{5} = 2 \left( \frac{1}{6} + \frac{1}{30} \right) = \frac{1}{3} + \frac{1}{15}$ $\frac{2}{7} = 2 \left( \frac{1}{8} + \frac{1}{56} \right) = \frac{1}{4} + \frac{1}{28}$ $\frac{25}{99} = 25 \left( \frac{1}{100} + \frac{1}{9900} \right) = \frac{25}{100} + \frac{25}{9900}$ $= \frac{1}{4} + \frac{1}{396}$	R2  M1A1  M1A1  M1  A1	

4	(a)	$\frac{1}{6} + \frac{1}{10} = \frac{5}{30} + \frac{3}{30} = \frac{8}{30} = \frac{4}{15}$	C2
	(b) (i)	$x = 3$ and $y = 9$ (or vice versa) in which case $k = \frac{9+3}{4} = 3$ giving $\frac{4}{27} = \frac{1}{9} + \frac{1}{27}$ <b>OR</b> $x = 1$ and $y = 27$ (or vice versa) in which case $k = \frac{1+27}{4} = 7$ giving $\frac{4}{27} = \frac{1}{7} + \frac{1}{189}$	B2
	(ii)	$x = 3$ and $y = 11$ (or vice versa) in which case $k = \frac{11+3}{7} = 2$ giving $\frac{7}{33} = \frac{1}{6} + \frac{1}{22}$	B2
	(c)	Take $x = 1$ and $y = 15$ (or vice versa) in which case $k = \frac{1+15}{4} = 4$ giving $\frac{4}{15} = \frac{1}{4} + \frac{1}{60}$	B2
	(d)	Taking $x = 1$ and $y = 20$ gives $k = 7$ and $\frac{3}{20} = \frac{1}{7} + \frac{1}{140}$	B1
		Taking $x = 2$ and $y = 10$ gives $k = 4$ and $\frac{3}{20} = \frac{1}{8} + \frac{1}{40}$	B1
		Taking $x = 4$ and $y = 5$ gives $k = 3$ and $\frac{3}{20} = \frac{1}{12} + \frac{1}{15}$	B1
	(e)	$1 = \frac{1}{2} + \frac{1}{2} = \frac{1}{2} + \frac{1}{3} + \frac{1}{6}$ using the pattern in part 2.	B1
	(f)	Breaking down $\frac{1}{6}$ as in question 2 (b) gives $1 = \frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{42}$	B1 Accept also $1 = \frac{1}{2} + \frac{1}{4} + \frac{1}{6} + \frac{1}{12}$ $1 = \frac{1}{2} + \frac{1}{3} + \frac{1}{10} + \frac{1}{15}$ $1 = \frac{1}{2} + \frac{1}{4} + \frac{1}{5} + \frac{1}{20}$
For clear communication and reasoning throughout the paper award C2			

**Total: 30 marks scaled down to 24.**