UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL MATHEMATICS	**0607/05**
Paper 5 (Core)	**For Examination from 2010**
SPECIMEN MARK SCHEME	
	1 hour

MAXIMUM MARK: 24

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

UNIVERSITY *of* CAMBRIDGE
International Examinations

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

1	(a)		$\dfrac{3}{24} + \dfrac{4}{24} = \dfrac{7}{24}$	AR1	(both accuracy & reasons are required)
	(b)		$\dfrac{2}{12} + \dfrac{3}{12} = \dfrac{5}{12}$	AR1	
2	(a)	(i)	$\dfrac{1}{3} + \dfrac{1}{6} = \dfrac{2}{6} + \dfrac{1}{6} = \dfrac{3}{6} = \dfrac{1}{2}$	R2	
		(ii)	$\dfrac{1}{4} + \dfrac{1}{12} = \dfrac{3}{12} + \dfrac{1}{12} = \dfrac{4}{12} = \dfrac{1}{3}$		
		(iii)	$\dfrac{1}{5} + \dfrac{1}{20} = \dfrac{4}{20} + \dfrac{1}{20} = \dfrac{5}{20} = \dfrac{1}{4}$		
	(b)		$\dfrac{1}{5} = \dfrac{1}{6} + \dfrac{1}{30}$ $\dfrac{1}{6} = \dfrac{1}{7} + \dfrac{1}{42}$ $\dfrac{1}{7} = \dfrac{1}{8} + \dfrac{1}{56}$	B2	(B1 or two correct)
	(c)		$\dfrac{1}{99} = \dfrac{1}{100} + \dfrac{1}{9900}$	B1	
3	(a)		$2 \times \dfrac{1}{3} = 2\left(\dfrac{1}{4} + \dfrac{1}{12}\right)$ So $\dfrac{2}{3} = \dfrac{2}{4} + \dfrac{2}{12} = \dfrac{1}{2} + \dfrac{1}{6}$	R2	
	(b)	(i)	$\dfrac{2}{5} = 2\left(\dfrac{1}{6} + \dfrac{1}{30}\right) = \dfrac{1}{3} + \dfrac{1}{15}$	M1A1	
		(ii)	$\dfrac{2}{7} = 2\left(\dfrac{1}{8} + \dfrac{1}{56}\right) = \dfrac{1}{4} + \dfrac{1}{28}$	M1A1	
	(c)		$\dfrac{10}{99} = 10\left(\dfrac{1}{100} + \dfrac{1}{9900}\right) = \dfrac{10}{100} + \dfrac{10}{9900}$ $= \dfrac{1}{10} + \dfrac{1}{990}$	M1 A1	

0607/05/SM/10   **[Turn over**

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

Total: 30 marks scaled down to 24.

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