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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/21**

Paper 2 (Extended) **May/June 2016**

MARK SCHEME

Maximum Mark: 40

Published

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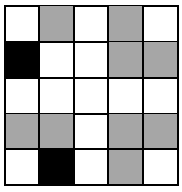
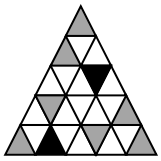
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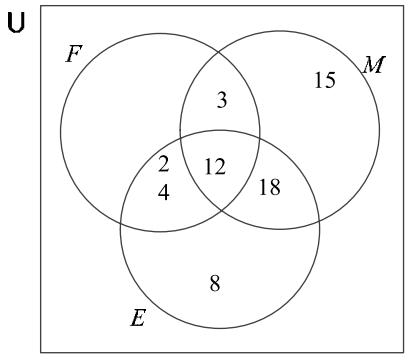
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Abbreviations

awrt answers which round to
cao correct answer only
dep dependent
FT follow through after error
isw ignore subsequent working
oe or equivalent
SC Special Case
nfww not from wrong working
soi seen or implied

Question	Answer	Mark	Part Marks
1 (a)	200	**1**	
(b)	$\frac{11}{20}$ oe	**2**	**M1** for $\frac{a}{20} - \frac{b}{20}$ with $a = 16$ or $b = 5$
2 (a)		**1**	
(b)		**1**	
3	$\frac{10 \times 300}{50 + 100}$	**M1**	Accept any 3 from 4
	20	**A1**	
4 (a)	$2^6 \times 3^8 \times 5^2$	**1**	
(b)	$2^3 \times 3^2$	**1**	
(c)	$2^5 \times 3^4 \times 5^{[1]} \times 7^3$	**2**	**B1** for 3 of 4 factors correct
5 (a)	0.13, 0.36, 0.32, 0.19 oe	**2**	**B1** for 2 or 3 correct
(b) (i)	1600	**1**	
(ii)	Sufficient trials oe	**1**	
6	$x = 14$	**3**	**M2** for $3x - 2x - 2 = 12$ or **M1** for $\frac{3x - 2(x+1)}{6} = 2$ or better

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Question	Answer	Mark	Part Marks
7 (a)		**2**	**B1** for 1 or 2 numbers omitted or misplaced
(b) (i)	5, 7, 11, 13, 17	**1FT**	
(ii)	8, 10, 14, 16	**1FT**	
8	$x < 1.25$ oe	**3**	With no wrong working seen **M1** for $2x + 3 > 6x - 2$ **M1FT** for $3 + 2 > 6x - 2x$ oe **M1FT** for $x < \frac{b}{a}$ from $ax < b$ oe
9 (a)	65	**1**	
(b)	115	**1FT**	**FT** 180 – *their* (a)
10 (a)	$3x(4x - 9y)$ final answer	**2**	**B1** for $3\left(4x^2 - 9xy\right)$ or $x\left(12x - 27y\right)$
(b)	$(a + 2b)(4a - c)$ final answer	**2**	**B1** for $4a\left(a + 2b\right) - c\left(a + 2b\right)$ or $a\left(4a - c\right) + 2b\left(4a - c\right)$
11	$\frac{\sqrt{7}}{7}$	**1**	
12	$\mathbf{p} = \mathbf{a} + \mathbf{b}$ oe $\mathbf{q} = 2\mathbf{a} + \mathbf{b}$ oe $\mathbf{r} = -2\mathbf{a} + \mathbf{b}$ oe	**3**	**B1** for each
13	$a = 2$ $b = 30$	**1** **1**	

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Question	Answer	Mark	Part Marks
14	[a =] 3 [b =] –12	**3**	**M1** for $kx(x-4)$ **M1** for substituting (8, 96) or $b = -4a$ soi OR **M1** for $0 = 4^2a + 4b$ or $b = -4a$ soi **M1** for $96 = 8^2a + 8b$ OR **M1** for $[y =]a\left((x-2)^2 - 4\right)$ **M1** for substituting (8, 96) or $b = -4a$ soi If zero scored, **SC1** for $a = 3$, or $b = -12$

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