

Sets & Venn Diagrams

Mark Scheme 1

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Sets & Venn Diagrams
Booklet	Mark Scheme 1

Time Allowed: 60 minutes

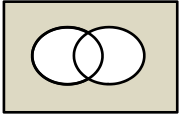
Score: /50

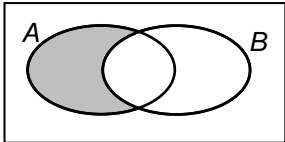
Percentage: /100

Grade Boundaries:

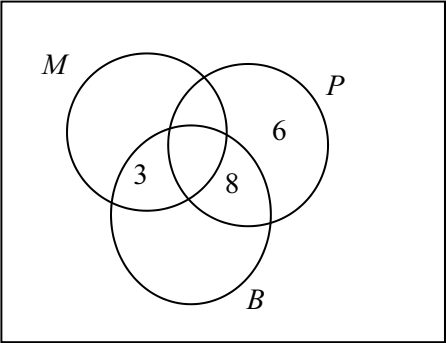
A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

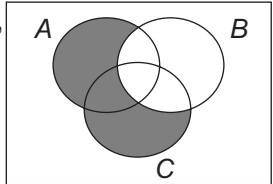


Question	Answer	Mark	Part marks
1 (a)	3	1	
(b)	$\frac{19}{27}$ oe	1	
(c)	$\frac{7}{10}$ oe	1	
(d)		1	

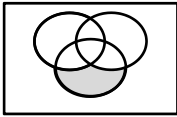
2 (a) (i)	8	1	
(ii)	9, 15	1	
(b)		1	



Qu.	Answ	Mark	Part Marks			
3	(a) (i)	3	B for each			
						
	(ii)			46	1FT FT 29 + their 3 values from (a)	
	(iii)			11	1	
	(iv)			$\frac{7}{19}$ oe	2	M1 for $\frac{n}{16 + \text{their } 3}$ ($0 < n < (16 + \text{their } 3)$) or $\frac{4 + \text{their } 3}{k}$ ($k > (4 + \text{their } 3)$)
	(b) (i)			$\frac{9}{200}$ or 0.045	1	
	(ii)			10800	3	M2 for $\frac{1}{2} (900 + 1500) \times 9$ oe or M1 for method of finding a relevant area
(iii)	7.2	1FT	FT (their 10800) \div 1500			

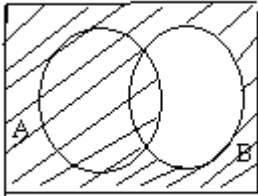
4	(a) (i)	4	1
	(ii)	{3, 9}	1
	(iii)	fewer than 6 numbers from {1, 3, 5, 7, 9, 11} or \emptyset	1
	(b)		1

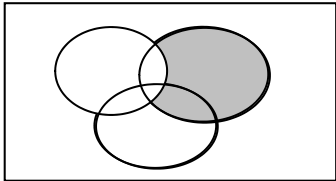


5	(a)	14	2	M1 for any two of 1, 11, 14, 4 correctly placed on Venn diagram or for $1 + 25 - x + x + 18 - x = 30$ oe
	(ii)	$\frac{11}{30}$ oe	1FT	FT $\frac{25 - \text{their (a)(i)}}{30}$ or $\frac{\text{their 11}}{30}$ from diagram
	(iii)	$\frac{11}{12}$ oe	1FT	FT their diagram e.g. $\frac{\text{their 11}}{12}$ or $\frac{25 - \text{their (a)(i)}}{12}$
	(b)		1	

6	(a)	5	1	
	(b)	$C \cap M$ oe	1	Allow e.g. $(B \cap C \cap M) \cup (C \cap M)$
	(c)	3	1	
	(d) (i)	$\frac{8}{30}$ oe	1	0.267 or better
	(ii)	$\frac{14}{30}$ oe	1	0.467 or better
	(e)	$\frac{30}{272}$ oe	3	M2 for $\frac{6}{17} \times \frac{5}{16}$ or M1 for $\frac{6}{17}$ seen 0.110[2...] or better



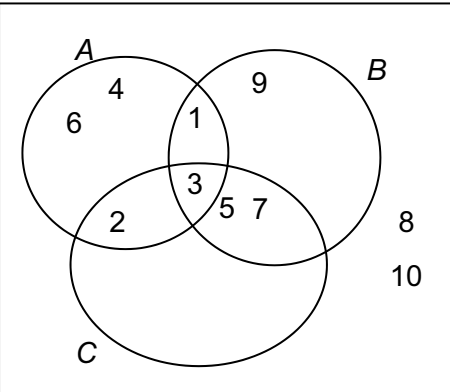
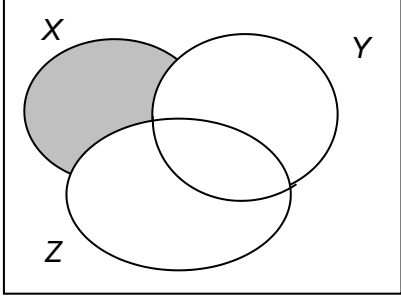
7		1	
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8 (a) (b)	18 	1 1	
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9 (a) (b)	10 $P \cup Q'$ or	1 1	
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<p>10 (a) (i)</p>		<p>3</p> <p>1</p> <p>1FT</p> <p>1</p> <p>1FT</p> <p>1</p>	<p>B2 for 8 or 9 numbers correct</p> <p>B1 for 6 or 7 numbers correct</p> <p>FT <i>their</i> intersection of all 3 sets – <i>their</i> diagram</p> <p>FT <i>their</i> set B on diagram</p>
<p>(ii)</p>		<p>1</p>	

