

X and Y Coordinates-Answers

Key Stage 3: 2003 Paper 1 Level 3-5

1.

Tier & Question					Marking overlay available	Moving C
3-5	4-6	5-7	6-8			
17	12	5			Correct response	Additional guidance
a	a	a		1m	Gives correct coordinates eg <ul style="list-style-type: none"> ■ (6, any value except 6 or 1) ■ (4, 5) ■ (8, 5) ■ (4, -3) ■ (8, -3) 	! <i>Use of overlay</i> As there is an infinite number of correct coordinates, a marking overlay is available for use if pupils give non-integer coordinates. Accept coordinates of any point that lies exactly on the straight line or on one of the circles, provided their point is neither (6, 6) nor on the same straight line as A and B
b	b	b		1m	Gives correct coordinates, ie (4, 5) or (8, 5) or (6, 3) or (4, -3) or (8, -3) or (6, -1)	✓ <i>Same correct position used for part (b) as for part (a)</i>

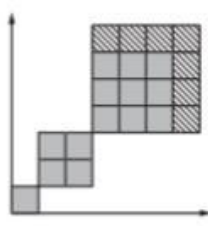
Key Stage 3: 2003 Paper 1 Level 4-6

2.

Tier & Question					Marking overlay available	Moving C
3-5	4-6	5-7	6-8			
17	12	5			Correct response	Additional guidance
a	a	a		1m	Gives correct coordinates eg <ul style="list-style-type: none"> ■ (6, any value except 6 or 1) ■ (4, 5) ■ (8, 5) ■ (4, -3) ■ (8, -3) 	! <i>Use of overlay</i> As there is an infinite number of correct coordinates, a marking overlay is available for use if pupils give non-integer coordinates. Accept coordinates of any point that lies exactly on the straight line or on one of the circles, provided their point is neither (6, 6) nor on the same straight line as A and B
b	b	b		1m	Gives correct coordinates, ie (4, 5) or (8, 5) or (6, 3) or (4, -3) or (8, -3) or (6, -1)	✓ <i>Same correct position used for part (b) as for part (a)</i>

Key Stage 3: 2004 Paper 2 Level 3-5

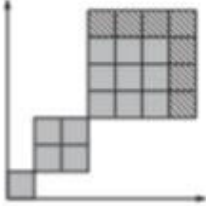
3.

Tier & Question				Patterns on a grid	
3-5	4-6	5-7	6-8		
11	4			Correct response	Additional guidance
a	a		1m	Gives the correct coordinates, ie (2, 1)	
b	b		1m	Gives both pairs of coordinates in either order eg <ul style="list-style-type: none"> ▪ (3, 3) (4, 4) 	
c	c		1m	Gives both pairs of coordinates in either order eg <ul style="list-style-type: none"> ▪ (16, 16) (17, 17) 	
d	d		2m	Makes a correct decision and gives a correct explanation that shows or implies 14 and justifies that 16 more are needed eg <ul style="list-style-type: none"> ▪ Yes, $1^2 + 2^2 + 3^2 + 4^2 = 30$ ▪ There are enough because $1 + 4 + 9 = 14$, $4 \times 4 = 16$ and $14 + 16 = 30$ ▪ The next square is 16 tiles (4 by 4 square drawn) and you've used up 14 of them, so there's just enough ▪ You have 16 tiles left and $4 \times 4 = 16$; all the tiles are used 	<p>! 16 not justified Accept only if the response makes it clear that exactly 30 tiles are used eg, for 2m accept</p> <ul style="list-style-type: none"> • Used 14, got another 16 so you will use up all the 30 tiles • $30 - 14 = 16$, so yes you have exactly the correct amount <p>eg, for 2m or 1m, do not accept</p> <ul style="list-style-type: none"> • 14 used, 16 left so yes you can • $30 - 14 = 16$, so yes you have enough <p>! 4 by 4 square drawn correctly, but the number of squares incorrectly processed For 1m, condone</p> <p>x Their explanation could imply that 7 more squares are needed, ie a total of 21 eg</p> 
			or 1m	States or implies that the next square uses 16 tiles eg <ul style="list-style-type: none"> ▪ You need 16 to make the next square ▪ Draws a 4 by 4 square with 16 cells ▪ 4×4 seen 	
			or	States or implies that exactly 30 tiles will be used, but does not justify that 16 more are needed eg <ul style="list-style-type: none"> ▪ You need all 30 ▪ There would be no tiles left over ▪ It all adds up to 30 	
			or	Identifies the pattern of differences eg <ul style="list-style-type: none"> ▪ +3, +5, +7 	

U1

Key Stage 3: 2004 Paper 2 Level 4-6

4.

Tier & Question					Correct response	Additional guidance
3-5	4-6	5-7	6-8	11 4		
a	a			1m	Gives the correct coordinates, ie (2, 1)	
b	b			1m	Gives both pairs of coordinates in either order eg <ul style="list-style-type: none"> (3, 3) (4, 4) 	
c	c			1m	Gives both pairs of coordinates in either order eg <ul style="list-style-type: none"> (16, 16) (17, 17) 	
d	d			2m or 1m	<p>Makes a correct decision and gives a correct explanation that shows or implies 14 and justifies that 16 more are needed eg</p> <ul style="list-style-type: none"> Yes, $1^2 + 2^2 + 3^2 + 4^2 = 30$ There are enough because $1 + 4 + 9 = 14$, $4 \times 4 = 16$ and $14 + 16 = 30$ The next square is 16 tiles (4 by 4 square drawn) and you've used up 14 of them, so there's just enough You have 16 tiles left and $4 \times 4 = 16$; all the tiles are used <p>or</p> <p>States or implies that the next square uses 16 tiles eg</p> <ul style="list-style-type: none"> You need 16 to make the next square Draws a 4 by 4 square with 16 cells 4×4 seen <p>or</p> <p>States or implies that exactly 30 tiles will be used, but does not justify that 16 more are needed eg</p> <ul style="list-style-type: none"> You need all 30 There would be no tiles left over It all adds up to 30 <p>or</p> <p>Identifies the pattern of differences eg</p> <ul style="list-style-type: none"> +3, +5, +7 	<p>! 16 not justified Accept only if the response makes it clear that exactly 30 tiles are used eg, for 2m accept</p> <ul style="list-style-type: none"> Used 14, got another 16 so you will use up all the 30 tiles $30 - 14 = 16$, so yes you have exactly the correct amount <p>eg, for 2m or 1m, do not accept</p> <ul style="list-style-type: none"> 14 used, 16 left so yes you can $30 - 14 = 16$, so yes you have enough <p>! 4 by 4 square drawn correctly, but the number of squares incorrectly processed For 1m, condone</p> <p>✗ Their explanation could imply that 7 more squares are needed, ie a total of 21 eg</p>  <p style="text-align: right;">so yes, there are enough</p>

U1

Key Stage 3: 2005 Paper 1 Level 3-5

5.

Tier & Question					Correct response	Additional guidance
3-5	4-6	5-7	6-8			
23	16	9	1			
a	a	a	1m	(60, 60)		
b	b	b	1m	Gives M as (0, 100)	<p>! <i>Answers for M and N transposed but otherwise completely correct</i> If this is the only error, ie gives M as (60, 0) and gives N as (0, 100), mark as 0, 1</p> <p>! <i>x- and y-coordinates transposed but otherwise correct for both M and N</i> If this is the only error, ie gives M as (100, 0) and gives N as (0, 60), mark as 0, 1</p>	
			1m	Gives N as (60, 0)		
				(U1)		

Key Stage 3: 2005 Paper 1 Level 4-6

6.

Tier & Question					Correct response	Additional guidance
3-5	4-6	5-7	6-8			
23	16	9	1			
a	a	a	1m	(60, 60)		
b	b	b	1m	Gives M as (0, 100)	<p>! <i>Answers for M and N transposed but otherwise completely correct</i> If this is the only error, ie gives M as (60, 0) and gives N as (0, 100), mark as 0, 1</p> <p>! <i>x- and y-coordinates transposed but otherwise correct for both M and N</i> If this is the only error, ie gives M as (100, 0) and gives N as (0, 60), mark as 0, 1</p>	
			1m	Gives N as (60, 0)		
				(U1)		

Key Stage 3: 2007 Paper 2 Level 3-5

7.

Tier & Question					Coordinates	
3-5	4-6	5-7	6-8			
8	1				Correct response	Additional guidance
a	a			1m	Gives A as (0, 6)	! <i>Answers for A and C transposed but otherwise completely correct</i> If this is the only error, ie gives A as (4, 3) and gives C as (0, 6), mark as 0, 1
				1m	Gives C as (4, 3)	
b	b			1m	Indicates point D on the graph at (2, 7)	! <i>Point inaccurate, not labelled or marked only with the letter D</i> Condone any unambiguous indication within 2mm of the correct intersection of the grid

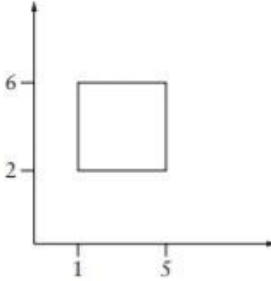
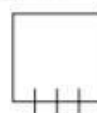
Key Stage 3: 2007 Paper 2 Level 4-6

8.

Tier & Question					Coordinates	
3-5	4-6	5-7	6-8			
8	1				Correct response	Additional guidance
a	a			1m	Gives A as (0, 6)	! <i>Answers for A and C transposed but otherwise completely correct</i> If this is the only error, ie gives A as (4, 3) and gives C as (0, 6), mark as 0, 1
				1m	Gives C as (4, 3)	
b	b			1m	Indicates point D on the graph at (2, 7)	! <i>Point inaccurate, not labelled or marked only with the letter D</i> Condone any unambiguous indication within 2mm of the correct intersection of the grid

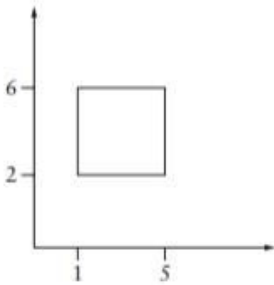
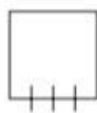
Key Stage 3: 2008 Paper 1 Level 3-5

9.

Tier & Question					Coordinates	
3-5	4-6	5-7	6-8		Correct response	Additional guidance
23	18	9				
				2m	Gives A as (3, 4)	
				or		
				1m	Gives A as (4, 3)	
				or		
					Shows or implies that the side length of the square is 4	
					eg	
					<ul style="list-style-type: none"> ▪ $5 - 1 = 4$ ▪ (5, 2) seen ▪ (1, 6) seen 	
					<ul style="list-style-type: none"> ▪  	
					<ul style="list-style-type: none"> ▪ 1, 2, (3), 4, 5 2, 3, (4), 5, 6 	
					<ul style="list-style-type: none"> ▪  	
				(U1)		

Key Stage 3: 2008 Paper 1 Level 4-6

10.

Tier & Question				Coordinates	
3-5	4-6	5-7	6-8		
23	18	9		Correct response	Additional guidance
				2m Gives A as (3, 4) or 1m Gives A as (4, 3) or Shows or implies that the side length of the square is 4 eg <ul style="list-style-type: none"> ▪ $5 - 1 = 4$ ▪ (5, 2) seen ▪ (1, 6) seen <div style="text-align: center;">  </div> <ul style="list-style-type: none"> ▪ 1, 2, (3), 4, 5 2, 3, (4), 5, 6 ▪  	
			(U1)		


Key Stage 3: 2009 Paper 2 Level 4-6

11.

Tier & Question				Midpoints	
3-5	4-6	5-7	6-8		
19	10	1		Mark	Correct response
				1m	Gives P as (30, 35)
				1m	Gives Q as (42, 0)
				1m	Gives R as (42, 35)
			(U1)		! Answers for P and Q transposed but otherwise completely correct If this is the only error, ie gives P as (42, 0) and gives Q as (30, 35), mark as 0, 1 ! Follow-through for R as (their x coordinate of Q, their y coordinate of P) Allow follow-through provided their coordinates for P, Q and R are different


Key Stage 3: 2010 Paper 1 Level 3-5

12.

Tier & Question				Finding points		
3-5	4-6	5-7	6-8	Mark	Correct response	Additional guidance
18	8					
				2m	(12, 9)	
				or		
				1m	Gives a correct x -coordinate or a correct y -coordinate for P, even if the other is incorrect or omitted	x Response of (0, 9) or (12, 5)
				or		
					Shows or implies that the width of the rectangle is 4 units	! Improper subtraction of coordinates eg, accept
					eg	• (0, 9) – (0, 5) = (0, 4) as evidence that the width of the rectangle is 4
					• $9 - 5 = 4$	
					• 	
				or		
					Gives P as (9, 12)	

Key Stage 3: 2010 Paper 1 Level 4-6

13.

Tier & Question				Finding points		
3-5	4-6	5-7	6-8	Mark	Correct response	Additional guidance
18	8					
				2m	(12, 9)	
				or		
				1m	Gives a correct x -coordinate or a correct y -coordinate for P, even if the other is incorrect or omitted	x Response of (0, 9) or (12, 5)
				or		
					Shows or implies that the width of the rectangle is 4 units	! Improper subtraction of coordinates eg, accept
					eg	• (0, 9) – (0, 5) = (0, 4) as evidence that the width of the rectangle is 4
					• $9 - 5 = 4$	
					• 	
				or		
					Gives P as (9, 12)	