| **Question** | **Scheme** | **Marks** |
| --- | --- | --- |
| **1(a)** | o.e. | M1 A1 |
|  |  |
|  | dM1 |
| or | A1 **cso** |
|  |  | **(4)** |
| **1(b)** |  |  |
| So | M1 |
| Coordinates are | A1 |
|  |  | **(2)** |
|  |  | **(6 marks)** |
| **2(a)** |  |  |
| , |  |
|  | M1 |
|  | A1 isw |
|  |  | **(2)** |
| **2(b)** |  | B1 |
| **and** either       So, | M1 |
|  | A1 **cso** |
|  |  | **(3)** |
| **2(c)** |  | M1 |
|  | A1 o.e. |
|  |  |
|  | A1 **cso** |
|  |  | **(3)** |
|  |  | **(8 marks)** |
| **3(a)** |  |  |
| , | B1 |
| So, | M1 |
|  | A1 |
|  |  | **(3)** |
| **3(b)** |  | M1 |
|  |  |
| ***or***  ***or***  ***or*** | dM1 |
| , {} | A1 **cso** |
|  |  | **(3)** |
|  |  | **(6 marks)** |
| **4(a)** |  | B1 |
|  | M1 A1 |
|  | M1 |
|  |  |
|  | A1 |
|  |  | **(5)** |
| **4(b)** | When   can be implied | B1 |
|  | M1 |
|  | M1 |
|  | A1 |
|  |  | **(4)** |
| **4(c)** |  | M1 |
|  |  |
| or equivalent | M1 A1 |
|  |  | **(3)** |
|  |  | **(12 marks)** |
| **5** |  |  |
| , | B1 B1 |
| So, | B1oe  (3) |
|  | M1 oe |
|  | M1  A1 A1 A1 |
|  |  | **(5)** |
|  |  | **(8 marks)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Source paper** | **Question number** | **New spec references** | **Question description** | **New AOs** |
| 1 | C4 2016 | 5 | 7.2, 7.5, 5.7 | Coordinate geometry, parametric differentiation | 1.1b |
| 2 | C4 2017 | 1 | 3.3, 7.5 | Coordinate geometry, Parametric differentiation | 1.1b, 2.1 |
| 3 | C4 2015 | 5 | 3.3, 7.5 | Parametric curves, parametric differentiation | 1.1b, 2.1 |
| 4 | C4 2012 | 6 | 3.3, 7.5, 5.5, 5.6 | Parametric curves and equations, Parametric differentiation | 1.1b, 2.1, 3.1a |
| 5 | C4 Jan 2012 | 5 | 3.3, 7.5 | Parametric curves and equations, Differentiation | 1.1b, 2.1 |