**S4 MATH SUBSIDIARY MARKINGSCHEMES,2019**

**solution 1a 3marks**



**Solution b 4MARKS**





**Solutio2a:** (**2marks)**

60° = ( ) radians = radians.

**Solution2b (2marks)**



**Solution 3 (8marks )**

Here, total number of pens = 9

Probability of drawing 1 blue pen = 4/9
Probability of drawing another blue pen = 4/9
Probability of drawing 1 black pen = 3/9
Probability of drawing 2 blue pens and 1 black pen = 4/9 x 4/9 x 3/9 = 48/729 = 16/243

**Answer 4)** **4marks**

 or 

 or 

 or 

**Answer 5a (3marks)**



**Answer 5b (3marks)**



**Answer 6: 6marks**

is the 1st number

 is the 2nd number

 is their sum

Solve for x ; 





Therefore, the 1st number is 18 and the 2nd number is 19

**Answer 7 6MARKS**



;



Answer 8 **( 6marks)**









**Answer 9 (4marks)**

**Condition** 





Or

**answer 10**

1. **2marks**



**b)** **2mark**s





**c) 2marks**



**d) 2marks**



**Solution11 4marks**

As the 3 mathematics books have to be together, consider these bound together as one book. There are now 6 books to be arranged and these can be performed in 6! =720 .**4MARKS**

 Note that we have taken the three mathematics books as one book; these three books can be arranged in 3! = 6 ways. Thus, the total number of arrangements is 720 x6= 4320

**answer12**

**a)**  **2marks**



b)  **3marks**



**c)**  (**5marks)**

  C.INDETER



**Answer 13 5marks**





**ANSWER 14 a 3marks**



**ANSWER 14B** **( 4MARKS)**

Let  be the angle between these two vectors





**answer 15a 3marks**

the mean = 

b) Distribution table **5marks**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| 8 | -1 | 1 |
| 3 | -6 | 36 |
| 9 | 0 | 0 |
| 8 | -1 | 1 |
| 9 | 0 | 0 |
| 18 | 9 | 81 |
| 8 | -1 | 1 |
| 9 | 0 | 0 |
| 63 |  |  |

c) Find the variance **(4marks)**





d)Standard deviation **(3marks)**



