**JINJA JOINT EXAMINATIONS BOARD**

S475/1 SUB MATHS

**MOCK EXAMINATIONS**

**MARKING GUIDE 2019**

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| --- | --- | --- | --- |
| No. | Solution | | Comment |
|  | =  =  =  =  = | | M1  M1  M1  B1  A1 |
|  | 3  6a+15d-a-7d=4  5a +8d = 4 but a = 5  5(5) + 8d=4  25+ 8d=4  =  d= | | M1  M1  M1  B1  A1 |
|  | **Possible combinations**   |  |  | | --- | --- | | 7 boys | 8 girls | | 4 | 1 | | 5 | 0 |   = 280 + 21  = 301 ways | | B1  M1 M1  M1  A1 |
| i)  ii) | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *x* | *0* | *1* | *2* | *3* | *4* | | *f(x)* | *k* | *2k* | *4k* | *8k* | *16k* |   *k+ 2k + 4k + 8k + 16k = 1*  k =  E(X)=  = 0 x  =  = | | M1  A1  M1  M1  A1 |
|  | 8 =  8 = | | M1  M1  M1  B1  A1 |
|  | Considering L.H.S  **=**  =  =  As required | | M1  B1  A1  M1  A1 |
|  | |  |  |  |  | | --- | --- | --- | --- | | Year | Rounds | 3-point moving totals | 3- point moving averages | | 2015  2016  2017  2018 | 1  2  3  1  2  3  1  2  3  1  2  3 | 1530  1310  1300  1290  1205  1194  1110  1096  1052  1014 | 510.00  436.67  433.33  430.00  401.67  398.00  370.00  365.00  350.67  338.00 | | | B1  B1  B1  B1  B1 |
|  | 5g – T = 5a………(i)  T-3g = 3a…………(ii)  Eqn i + ii  5g – 3g = 8a  2g = 8a  a= g ms-2  a= 2.45ms-2  T= 3a + 3g  T= 3(2.45) + 3 (9.8)  T = 36.75N | | B1  B1  M1  M1  A1 |
| **SECTION B** | | | |
| 1. I)   ii) | | At point B (0, 13)  From  At turning point  From y =  For  the turning point is (3, 4)  From  Since then the turning point (3, 4)  Is a minimum point  Intercepts  For *x –* intercepts y= 0  X =  *X*=  Since there are no real values of x then the curve does not cut the x- axis  For y – intercept *x =* 0  y =  y = 13  the intercept is (0, 13)  C:\Users\Sec comp\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG_20190510_140145.jpg | M1  M1  M1  B1  A1  M1  M1  A1  A1  B1 |
| ai)    ii)  bi)  ii)     1. i)   ii)    iii)  b)    12.a)i  ii)  bi)  ii)    13.      14.  i)  ii)  iii)  iv)  13. | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Marks | *f* | *x* | *fx* | *Cf* | *C.B* | | 50 -55 | *3* | *52.5* | *157.5* | *3* | *50 – 55* | | 55- 60 | *7* | *57.5* | *402.5* | *10* | *55- 60* | | 60 – 65 | *15* | *62.5* | *937.5* | *25* | *60 – 65* | | 65 – 70 | *22* | *67.5* | *1485* | *47* | *65 - 70* | | 70 -75 | *19* | *72.5* | *1377.5* | *66* | *70 – 75* | | 75 - 80 | *8* | *77.5* | *620* | *74* | *75 – 80* | | 80 - 85 | *2* | *82.5* | *165* | *76* | *80 – 85* | |  |  |  |  |  |  | | Mean mark =  =  = 67.70 (2dp)  Median mark = C  Median class is 65 – 70  Median = 65 +  = 65 +  = 67.95  Interquartile range = upper quartile – lower quartile  = 57th value  th value = 19th value  Inter quartile range = 72.5 – 63.25  = 9.25  Those who scored 72% and above  = 76 – 55  = 21 students  Price relative =  =  for wheat flour =  = 111.76  for sugar =  = 90  For milk =  = 140  For eggs =  = 94.4  For food colour =  = 130  Simple aggregate price index =  =  =  = 101.99  Weight aggregate price index =  =  =  = 105.21  The weighted aggregate price index increased by 5.21%  105.21 =  P2017  = shs 2091.01  p=0.3 q = 0.7 n= 12  P(  =  =0.00019096447  =0.0002 (4dp)  =  =0.2311 + 0.1585  =0.3896  Let x denote marks obtained  =    P  =0.5 – 0.4772  = 0.0228  So the percentage of candidates who obtained more than 70 marks  = 0.0228 x 100  = 2.28%  P  P(    = 2 (0.3413)  =0.6826  percentage is 68.26%   |  |  | | --- | --- | | Solution | Comment | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Cake | Flour | Oil | Eggs | Sugar | | A | 2 | 1 | 8 | ¼ | | B | 3 | 2 | 12 | ½ | | C | 5 | 2.5 | 20 | ¾ |   for 2017  for 2018  for 2017    =  =  The total cost = 10900 + 18000 + 27650  = Shs 56550  For 2018  =  =  The total = 13900 + 22800 + 35200  = shs 71900  Difference between the costs = 71900 – 56550  Shs 15350.  C:\Users\Sec comp\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG_20190510_140106.jpg  Normal reaction R= 3gcos30o  = 3 x 9.8 cos30o  =25.46N  Frictional force =  =0.3 x 25.46  = 7.64N  Along the plane  Net force = 3gsin30o – R  F= 3gsin30o – 7.64  3*a* = 3gsin30o – 7.64  *a*=  *a*= 2.35ms-2  *u*= oms-1, a = 2.35ms-2, t=4s  *S* = ut + at2  S=0(4)+ (2.35) (4)2  S=18.8m  **END** | | B1  M1 A1  A1  A1  M1  M1  B1  A1  M1  M1  B1  A1  M1  A1  B2  M1  M1  A1  M1  A1  M1  M1  M1  B1  A1  M1 B1  A1 | | | | | | | | | B2  M1  A1  M1  M1  A1  M1  A1  M1  A1 |
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