Solutions Year 10

Mathematics A Course

Yearly Exam 2012

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| --- | --- | --- | --- |
| **Section 1 Non-Calculator** | |  |  |
|  |  |  |
|  |  |
|  |  |  |  |
|  | 78 500 000 = |  |  |
|  | Pay = |  | Metal as Anything  Thrash and Trash  Metal as Anything  Kings of the Iron Age  Deaf Metal  Chrome Attack |
|  | = 5 ÷ 11= |  | Ferrica |
|  | 12 : 5 = 240 : *x*  *x* = 5 × 20 = ***100 bikes*** |  | Mean = |
|  | Original price = $ 240  Discount = 240 × 0.4 = 96.00  Selling price = 240 – 96  = ***$144.00*** |  | IQR = 5 – 2 = 3 |
|  |  |  | 3:20 + 2:45 + 0 :27 =5:92 = 6:32 pm |
|  | *Step 1* 5 matches  *Step 2* 12 matches (+7)  *Step 3* 19 matches (+7)  *Step 4* 26 matches(+7)  *Step 5* 33 matches (+7)  ***Step 6 40 matches***  (+7) |  |  |
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High School

Year 10 Yearly Exam 2012

Mathematics A Course

Multiple Choice Section Answer Sheet

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Teacher \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Completely fill the response oval representing the most correct answer.

1. A B C D

2. A B C D

3. A B C D

4. A B C D

5. A B C D

6. A B C D

7. A B C D

8. A B C D

9. A B C D

10. A B C D

11. A B C D

12. A B C D

13. A B C D

14. A B C D

15. A B C D

16. A B C D

17. A B C D

18. A B C D

19. A B C D

20. A B C D

21. A B C D

22. A B C D

23. A B C D

24. A B C D

25. A B C D

26. A B C D

27. A B C D

28. A B C D

29. A B C D

30. A B C D

31. A B C D

32. A B C D

33. A B C D

34. A B C D

35. A B C D

36. A B C D

37. A B C D

38. A B C D

39. A B C D

40. A B C D

41. A B C D

42. A B C D

43. A B C D

44. A B C D

45. A B C D

46. A B C D

47. A B C D

48. A B C D

49. A B C D

50. A B C D

Solutions

|  |  |  |  |
| --- | --- | --- | --- |
|  | | **Section 2 Part B**  **Longer Answer** |  |
|  | (a) | Write as complete surds | **1 mark** |
|  | (b) |  | **1 mark** |
|  | (a) | Number who listen to music and play sport = 14 + 5 = 19  Probability that a student listens to music and plays sport | **1 mark** |
|  | (b) | Number who read Science Fiction = 20 + 6 + 5 + 7 = 38  From those who read Science Fiction, the number who listen to music and play sport = 5.  Probability that a student who reads Science Fiction, also listens to music and plays sport | **2 marks**  1 for total for SF and 1 for probability. |

|  |  |  |  |
| --- | --- | --- | --- |
|  | (a) |  | **3 marks**  2 for graph of parabola with all intercepts correct  1 for graph of exponential with *y* intercept correct |
|  | (b) |  | **2 marks**  1 for factors 1 for simplifying |
|  | (c) |  | **1 mark** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | (a) | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Class | Class Centre *x* | Frequency *f* | *fx* | Cumulative *f* | | 1 – 5 | 3 | 4 | 12 | 4 | | 6 – 10 | 8 | 6 | 48 | 10 | | 11 – 15 | 13 | 8 | 104 | 18 | | 16 – 20 | 18 | 2 | 36 | 20 | |  |  | = 20 | 200 |  | |  | | | | | | **2 marks**  1 for table  1 for mean |
|  | (b) |  | **2 marks**  1 for ogive and 1 for correct labels  Histogram not required but can be used (shown dotted) |
|  | (c) | Interquartile range = 15.5 – 6.5 = 9 | **1 mark** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | (a) |  | **1 mark** |
|  | (b) | OR CAN BE DONE BY USING THE SINE RULE. | **2 marks**  1 for set up of equations  1 for result |
|  | (c) | Consider the right triangle shown | **1 mark** |
|  | (d) |  | **2 marks**  1 for area of base  1 for volume. |

|  |  |  |  |
| --- | --- | --- | --- |
|  | (a) |  | **2 marks**  1 mark for two pairs of equal angles with reasons  1 mark for conclusion with reason |
|  | (b) | Since ∆ *ABC* ||| ∆ *DEC*. | **1 mark** |