ACE Examination 2016

Year 9 Mathematics Yearly Examination

Worked solutions and marking guidelines

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| **Section 1** | | | |
|  | **Solution** | | **Criteria** |
| 1 |  | | 1 Mark: D |
| 2 | (A) Mode = 7, Range = 7 | (B) Mode = 6, Range = 5 | 1 Mark: B |
|  | (C) Mode = 5, Range = 6 | (D) Mode = 5, Range = 6 |  |
| 3 | (Exterior angle theorem) | | 1 Mark: B |
| 4 |  | | 1 Mark: B |
| 5 |  | | 1 Mark: C |
| 6 |  | | 1 Mark: D |
| 7 | Let the width be *x* | | 1 Mark: B |
| 8 | 380 other tickets. | | 1 Mark: D |
| 9 | Triangle 1:  Triangle 2: | | 1 Mark: C |
| 10 |  | | 1 Mark: D |
| 11 |  | | 1 Mark: B |
| 12 |  | | 1 Mark: D |

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| 13 |  | | | 1 Mark: C |
| 14 | Coordinates of *C* are . |  | | 1 Mark: D |
| 15 |  | | | 1 Mark: B |
| 16 |  | | | 1 Mark: D |
| 17 | Sample space = {HH, HT, TH, TT} | | | 1 Mark: A |
| 18 |  | | | 1 Mark: A |
| 19 |  | | | 1 Mark: B |
| 20 |  | | | 1 Mark: A |
| 21 | Vertically opposite angles are equal.  Cointerior angles | |  | 1 Mark: C |
| 22 |  | | | 1 Mark: C |
| 23 |  | | | 1 Mark: B |
| 24 |  | | | 1 Mark: C |
| 25 |  | | | 1 Mark: B |

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| **Section 2 Part B** | | | |
|  | **Solution** | | **Criteria** |
| 26(a) |  | | 1 Mark: Correct answer. |
| 26(b) (i) |  | | 1 Mark: Correct answer. |
| 26(b) (ii) |  | | 1 Mark: Correct answer. |
| 26(c) (i) | Zac receives the retainer of $300. | | 1 Mark: Correct answer |
| 26(c) (ii) | Zac’s pay for the week was $2340 | | 1 Mark: Correct answer |
| 27(a) (i) |  | | 1 Mark: Correct answer. |
| 27(a) (ii) |  | | 1 Mark: Correct answer. |
| 27(b) |  | | 1 Mark: Correct answer. |
| 27(c) (i) | Equiangular (all angles are equal)  alternate angles  alternate angles  vertically opposite |  | 1 Mark: Correct answer. |
| 27(c) (ii) |  | | 1 Mark: Correct answer. |
| 28(a) (i) |  | | 1 Mark: Correct answer. |
| 28(a) (ii) |  | | 1 Mark: Correct answer. |
| 28(a) (iii) |  | | 1 Mark: Correct answer. |

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| 28(b) |  | | 1 Mark: Correct answer. |
| 28(c) |  | | 1 Mark: Correct answer. |
| 29(a) |  | | 1 Mark: Correct answer. |
| 29(b) | Alternatively – area can be calculated by adding areas. |  | 1 Mark: Correct answer. |
| 29(c) |  | | 1 Mark: Correct answer. |
| 29(d) | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Stem | Leaf | | | | | | | | | | | 0 | 2 | 8 | 9 |  |  |  |  |  |  |  | | 1 | 0 | 1 | 1 | 2 |  |  |  |  |  |  | | 2 | 1 |  |  |  |  |  |  |  |  |  | | | 1 Mark: Correct answer. |
| 29(e) |  | | 1 Mark: Correct answer. |
| 30(a) |  | | 1 Mark: Correct answer. |
| 30(b) (i) |  | | 1 Mark: Correct answer. |
| 30(b) (ii) |  | | 1 Mark: Correct answer. |
| 30(b) (iii) |  | | 1 Mark: Correct answer. |
| 30(c) |  | | 1 Mark: Correct answer. |

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| **Section 2 Part A: Advanced** | | | |
|  | **Solution** | | **Criteria** |
| 31(a) |  | | 1 Mark: Correct answer. |
| 31(b) (i) | Cointerior angles are supplementary |  | 1 Mark: Correct answer. |
| 31(b) (ii) | (angle sum of a pentagon) | | 1 Mark: Correct answer. |
| 31(c) |  | | 1 Mark: Correct answer. |
| 31(d) |  | | 1 Mark: Correct answer. |
| 32(a) (i) | Median is the average of the 16th and 17th score  Median is 19. | | 1 Mark: Correct answer. |
| 32(a) (ii) |  | | 1 Mark: Correct answer. |
| 32(b) |  | | 1 Mark: Correct answer. |
| 32(c) (i) | There are 13 hearts (including king of hearts) + 3 other kings. | | 1 Mark: Correct answer. |
| 32(c) (ii) | There are 4 kings in the standard deck of cards. | | 1 Mark: Correct answer. |