|  |  |  |
| --- | --- | --- |
| MC900229237[1] ACE Examinations  2016  **YEAR 7**  **YEARLY EXAMINATION** | | Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Mathematics | | |
| **General Instructions**   * Reading time - 5 minutes * Working time - 75 minutes * Write using black or blue pen * You may use a pencil to draw or complete diagrams * Calculators may be used | **Total marks - 50**  **Section 1**  **20 marks**  Attempt Questions 1-20  Allow 30 minutes for this section  **Section 2**  **30 marks**  This section has two parts  Part A - Questions 21-24 20 marks  Part B - Questions 25-26 (advanced) 10 marks  Allow 45 minutes for this section | |

|  |
| --- |
| Section 1 |
|  |
| 20 marks |
| Attempt Questions 1 - 20 |
| Allow about 30 minutes for this section |
|  |
| Use the multiple-choice answer sheet for Questions 1-20 |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
| 1. is equal to: | | | |
|  | (A) 0.0083 | | |
|  | (B) 7.3 | | |
|  | (C) 73 | | |
|  | (D) 730 | | |
|  | | | |
| 1. Which of the following is a like term of ? | | | |
|  | | (A) | |
|  | | (B) | |
|  | | (C) | |
|  | | (D) 9 | |
|  | | | |
| 1. Ashton ran a 400 metre race at a sports carnival in 1 minute 51.7 seconds.   This time is closest to: | | | |
|  | | (A) 1.5 minutes | |
|  | | (B) 1.6 minutes | |
|  | | (C) 1.8 minutes | |
|  | | (D) 1.9 minutes | |
|  | | | |
| 1. What is the sum of 8, 1086 and 2107? | | | |
|  | | (A) 1311 | |
|  | | (B) 2301 | |
|  | | (C) 3180 | |
|  | | (D) 3201 | |
|  | | | |
| 1. There are 13 boys in a class of 20 students.   What is the probability of choosing a boy at random? | | | |
|  | | (A) | (B) |
|  | | (C) 13 | (D) 20 |
|  | | | |

|  |  |
| --- | --- |
| 1. What is the value of *x*? | |
|  | |
|  | (A) 18˚ |
|  | (B) 28˚ |
|  | (C) 72˚ |
|  | (D) 108˚ |
|  | |
| 1. Which one of the following does *not* equal 1? | |
|  | (A) |
|  | (B) |
|  | (C) |
|  | (D) |
|  | |
| 1. Convert 87 millimetres to centimetres. | |
|  | (A) 0.087 cm |
|  | (B) 0.87 cm |
|  | (C) 8.7 cm |
|  | (D) 8700 cm |
|  | |
| 1. Which arrangement shows the numbers from highest to lowest? | |
|  | (A) |
|  | (B) |
|  | (C) |
|  | (D) |
|  | |
| 1. What is the area of the following triangle? | |
|  | |
|  | (A) 40 cm2 |
|  | (B) 72 cm2 |
|  | (C) 144 cm2 |
|  | (D) 240 cm2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. means: | | | | |
|  | (A) 10,000,000 | | | |
|  | (B) | | | |
|  | (C) | | | |
|  | (D) 107 | | | |
|  | | | | |
| 1. What is the value of *x* in this diagram? | | | | |
|  | | | | |
|  | (A) 23º | | | |
|  | (B) 37º | | | |
|  | (C) 70º | | | |
|  | (D) 73º | | | |
|  | | | | |
| 1. What is the solution to the equation ? | | | | |
|  | (A) | | | |
|  | (B) | | | |
|  | (C) | | | |
|  | (D) | | | |
|  | | | | |
| 1. Which is the largest number? | | | | |
|  | (A) | | | |
|  | (B) 0.05 | | | |
|  | (C) 60% | | | |
|  | (D) 0.4 | | | |
|  | | | | |
| 1. Which of these angles is about 330˚? | | | | |
|  | (A) |  | (B) |  |
|  | (C) |  | (D) |  |

|  |  |
| --- | --- |
| 1. Which one of these numbers is a prime number? | |
|  | (A) 14 |
|  | (B) 21 |
|  | (C) 25 |
|  | (D) 29 |
|  | |
| 1. What is the probability of *not* drawing a club from a standard pack of cards? | |
|  | (A) 0.0001 |
|  | (B) 0.25 |
|  | (C) 0.75 |
|  | (D) 1 |
|  | |
| 1. What percentage of the rectangle is shaded? | |
|  | |
|  | (A) 7% |
|  | (B) 29.1% |
|  | (C) |
|  | (D) 30% |
|  | |
| 1. Which equation describes this situation? | |
| The cost, *c*, in dollars, of some grocery items plus a $15 delivery charge totals $95. | |
|  | (A) |
|  | (B) |
|  | (C) |
|  | (D) |
|  | |
| 1. If the area of a rectangle is 32 cm2 and its width is 10 mm, then its length is: | |
|  | (A) 3.2 mm |
|  | (B) 3.2 cm |
|  | (C) 22 cm |
|  | (D) 32 cm |
|  | |

|  |
| --- |
| Section 2 Part A |
|  |
| 20 marks |
| Attempt Questions 21 ‒ 24 |
| Allow about 20 minutes for this section |
|  |
| Answer the questions in the spaces provided. |
|  |
| All necessary working should be shown in every question. |
|  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question 21** | | | (5 marks) |  | **Marks** |
|  |  |  | | |  |
| (a) | Bonnie starts driving home from work at 4:47 pm. Her journey expected to take 75 minutes. What time is she expected home? | | | | **1** |
|  |  | | | |  |
| (b) | Calculate the value of . | | | | **1** |
|  |  | | | |  |
| (c) | A container of cream contains the following ingredients: 96.7 mL fat,  94.0 mL water, 5.6 mL carbohydrate and 3.7 mL protein. | | | |  |
|  | (i) | How many millilitres are in the container of cream? | | | **1** |
|  |  |  | | |  |
|  | (ii) | What fraction of the cream is carbohydrate? | | | **1** |
|  |  |  | | |  |
| (d) | Write three decimal numbers between 2.7 and 2.8. | | | | **1** |
|  |  | | | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question 22** | | | (5 marks) |  | **Marks** |
|  |  |  | | |  |
| (a) | Write the following numbers in ascending order (smallest to largest). | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |
| (b) | Isabel can read two pages of a book in 5 minutes.  How many pages can she read in  hours? | | | | **1** |
|  |  | | | |  |
| (c) | Find the value of the pronumeral. | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |
| (d) | What is the probability of rolling a 1 with a fair 6-sided die? | | | | **1** |
|  |  | | | |  |
| (e) | Write an algebraic expression for the sum of double *x* and *y*. | | | | **1** |
|  |  | | | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question 23** | | | (5 marks) |  | **Marks** |
|  |  |  | | |  |
| (a) | Simplify the following expressions. | | | |  |
|  | (i) |  | | | **1** |
|  |  |  | | |  |
|  | (ii) |  | | | **1** |
|  |  |  | | |  |
| (b) | Draw all axes of symmetry of the shape below. | | | | **1** |
|  |  | | | |  |
| (c) | Plot and label the following four points on the number plane below: | | | | **2** |
|  |  | | | |  |
|  |  | | | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question 24** | | | (5 marks) |  | **Marks** |
|  |  |  | | |  |
| (a) | What is the perimeter of this shape? | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |
| (b) | The cost of petrol is 139.5 cents per litre. Find the cost of 55 L of petrol, correct to the nearest cent. | | | | **1** |
|  |  | | | |  |
| (c) | What is the smallest whole number that can be written in the empty square to make the following statement correct? | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |
| (d) | If  find the value of *y* when ,  and . | | | | **1** |
|  |  | | | |  |
| (e) | What is the value of *x*? | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |

|  |
| --- |
| Section 2 Part B: Advanced |
|  |
| 10 marks |
| Attempt Questions 25 ‒ 26 |
| Allow about 15 minutes for this section |
|  |
| Answer the questions in the spaces provided. |
|  |
| All necessary working should be shown in every question. |
|  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question 25** | | | (5 marks) |  | **Marks** |
|  |  |  | | |  |
| (a) | Find the value of *x* in the following diagram. Give reasons for your answer. | | | | **2** |
|  |  | | | |  |
|  |  | | | |  |
| (b) | Solve the following equations. | | | |  |
|  | (i) |  | | | **1** |
|  |  |  | | |  |
|  | (ii) |  | | | **1** |
|  |  |  | | |  |
| (c) | Put the three numbers 4,  and  into the boxes to make a true statement. | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question 26** | | | (5 marks) |  | **Marks** |
|  |  |  | | |  |
| (a) | A parallelogram has one angle that measures 126˚.  What size is each of the three remaining angles? | | | | **1** |
|  |  | | | |  |
|  |  | | | |  |
| (b) | If *x* is an even whole number divisible by 3, what are the possible last digits of *x*? | | | | **1** |
|  |  | | | |  |
| (c) | The average of two numbers is 66. If one of the numbers is 95, what is the other number? | | | | **1** |
|  |  | | | |  |
| (d) | The numbers 3,4,5 are arranged to form a three-digit number. | | | |  |
|  | (i) | List the three-digit numbers contained within the sample space. | | | **1** |
|  |  | | | |  |
|  | (ii) | What is the probability that the number formed is even? | | | **1** |
|  |  | | | |  |

**End of test**