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| Year 9 | | *Equations* | Non Calculator |
| **Skills and Knowledge Assessed:**   * Sketch linear graphs using the coordinates of two points and solve linear equations (ACMNA215) * Substitute values into formulas to determine an unknown (ACMNA234) * Solve problems involving linear equations, including those derived from formulas (ACMNA235) * Solve linear inequalities and graph their solutions on a number line (ACMNA236) * Solve linear equations involving simple algebraic fractions (ACMNA240) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 1Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper. | | | |
|  | Solve the equation :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Solve :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Solve the equation :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Solve the equation :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Solve :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Solve the equation :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Determine if  is a solution to the equation:  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Write the inequality which is represented on the number line below.    ………………………………………………………………………………………………. | | |
|  | Solve the equation :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Solve the inequality :  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | The formula for the surface area of a square prism is given by  What is the value of *l* if *A* =78 when *s* = 3?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Graph the solution to  on the number line provided.  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |

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| Year 9 | | *Equations* | Calculator Allowed |
| Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 2Multiple Choice Section | | | |
| Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section. | | | |
|  | Solve for  *t*:    A.  B.  C.  D. | | |
|  | Which is the correct solution to the equation:    A.  B.  C.  D. | | |
|  | Which line in the solution of the equation  , contains an error?     1. Line 1 B. Line 2 C. Line 3 D. Line 4. | | |
|  | Which of the following is the solution to the equation  ?   1. B.  C.  D. | | |
|  | Solve for  *t*:    A.  B.  C.  D. | | |
|  | Which is the correct solution to the equation:    A.  B.  C.  D. | | |
|  | Which number line graph gives the solution to  ?    A.  B.  C.  D. | | |
|  | The solution to  is:  A.  B.  C.  D. | | |
|  | Which of the following is the solution to the equation  A.  B.  C.  D. | | |
|  | When the values  , *x* = 8 and  are substituted into the formula  , the resulting equation is.  A.  B.  C.  D. | | |
|  | Which line in the solution below contains an error?     1. Line 1 B. Line 2 C. Line 3 D. Line 4 | | |
|  | Which is the complete solution to  A*.*  B.  C.  D. | | |

# Equations

# Multiple Choice Answer Sheet

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

|  |  |  |
| --- | --- | --- |
| Year 9 | *Equations* | Calculator Allowed |
| Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Section 3** Longer Answer Section | | |
| Showing all lines of working in the spaces provided.  Leave non integer answers as fractions.  Calculators are allowed for this section. | | |

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| 1. | (a)  2 marks | Solve :  ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. | (d)  3  marks | ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. |
| b)  2 marks | Solve :  ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. | (e)  3 marks | If  , find the value of  when  .  ………………………………………….  ………………………………………….  …………………………………………. |
|  | (c)  2 marks | Solve :  ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. | (f)  3 marks | Solve  and graph the solution on a number line.  ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. |

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| 2. | (a)  2 marks | Solve :  ………………………………………….  ………………………………………….  …………………………………………. | (d)  3  marks | Solve  and graph the solution on a number line.  ………………………………………….  …………………………………………. |
|  | b)  3  marks | Solve :  ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. | (e)  3 marks | The formula gives the shaded area shown.    Find the value of *b*, when  and    ………………………………………….  ………………………………………….  …………………………………………. |
|  | c)  3  marks | A rectangle is such that its length is 2 metres more than twice its width.  Let the length be *L* metres.  The perimeter is given by  i) Write an expression for *L* in terms of *W*.  ………………………………………….  ii) Write an equation for *P* in terms of *W* and solve it to find the length and width, if the perimeter is 79 m.  ………………………………………….  ………………………………………….  …………………………………………. | (f)  3 marks | Find all values of  for which :    ………………………………………….  ………………………………………….  ………………………………………….  …………………………………………. |

*Equations*

# ANSWERS

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| --- | --- |
| Section 1 ( 1 mark each) | |
|  | Working and Answers |
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| Section 2 (1 mark each) | | |
|  | Working | Answers |
|  |  | A |
|  |  | C |
|  | Line 1 should be | A |
|  |  | C |
|  |  | A |
|  |  | D |
|  | Which is graph A. | A |
|  |  | D |
|  |  | C |
|  |  | B |
|  | Line 2 should be | B |
|  |  | D |

# Equations

# Multiple Choice Answer Sheet

Name \_\_\_ Marking Sheet

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

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| **Section 3** Longer Answer Section |
| ANSWERS |

|  |  |  |  |  |
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| 1. | (a)  2 marks | Solve : | (d)  2  marks |  |
| b)  2 marks | Solve : | (e)  2 marks |  |
|  | (c)  2 marks | Solve : | (f)  2 marks | Solve |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2. | (a)  2 marks | Solve : | (d)  2  marks |  |
|  | b)  3  marks | Solve : | (e)  3 marks | when  and |
|  | c)  3  marks | i) length is 2 metres more than twice its width  Twice width = *2W*  *Two metres more than this.*  *L=2W +2*  ii) Write an equation for *P* in terms of *W* and solve it to find the length and width, if the perimeter is 79 m. | (f)  3 marks | Find all values of  for which : |