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| Year  10 | | Mathematics Test  Non Right Triangle Trigonometry | | Calculator Allowed |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper.  THE DIAGRAMS ARE NOT DRAWN TO SCALE. | | | |
| 1. | Write a statement of the sine rule that could be used to find *e* in ∆*EFG.*  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 2. | Use the sine rule to find the length of *QR* correct to 1 decimal place.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 3. | Use the cosine rule to find the size of  correct to the nearest degree.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 4. | Use the cosine rule to find the value of *x* correct to 2 significant figures.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 5. | Use the sine rule to find the value of  correct to the nearest degree.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 6. | Find the size of  correct to the nearest degree.  ...........................................................................  ...........................................................................    ........................................................................... | | | |
| 7. | Calculate the length of *VW* correct to 1 decimal place.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 8. | Find the value of  correct to the nearest degree.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 9. | Calculate the value of *d* correct to the nearest centimetre.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |
| 10. | Calculate the area of the triangle below, correct to the nearest square centimetre.  ...........................................................................  ...........................................................................    ...........................................................................  ........................................................................... | | | |

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| Year  10 | | Mathematics Test  Non Right Triangle Trigonometry | | Calculator Allowed |
| Multiple Choice Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | 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.  THE DIAGRAMS ARE NOT DRAWN TO SCALE. | | | |
| 1. | Which statement is ***not*** correct?  A.  B.  C.  D. | | | |
| 2. | Which statement is correct?  A.  B.  C.  D. | | | |
| 3. | Use the sine rule to find the value of *a*.  A. 3.9  B. 6.4  C. 6.7  D. 11.6 | | | |
| 4. | Use the cosine rule to find the length of side *PQ*.  A. 12.9 cm  B. 14.0 cm  C. 19.7 cm  D. 44.2 cm | | | |
| 5. | Use the sine rule to find the value of .  A. 40  B. 44  C. 51  D. 73 | | | |
| 6. | Use the cosine rule to find the size of.  A. 38o  B. 41o  C. 49o  D. 92o | | | |
| 7. | Use the area formula to find the area of ∆*PQR*.  A. 150 cm2  B. 172 cm2  C. 228 cm2  D. 344 cm2 | | | |
| 8. | Find the value of *x*.  A. 6.6  B. 9.4  C. 12.8  D. 54.4 | | | |
| 9. | Find the length of side *MN*.  A. 3.7 km  B. 5.2 km  C. 15.3 km  D. 28.5 km | | | |
| 10. | Find the value of .  A. 67  B. 37  C. 19  D. 11 | | | |
| 11. | Find the size of.  A. 23o  B. 55o  C. 68o  D. 102o | | | |
| 12. | Calculate the area of ∆*KLM*.  A. 302 cm2  B. 147 cm2  C. 112 cm2  D. 63 cm2 | | | |

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| Year  10 | | | Mathematics Test  Non Right Triangle Trigonometry | | Calculator Allowed |
| Longer Questions | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper.  Calculators are allowed for this section. | | | | |
| 1. | Hannah wants to calculate the height of one of the tallest trees on her property. From a point A, on level ground, she measures the angle of elevation of the top of the tree (T) as 20o. She then walks 20 metres directly toward the tree to a point B and measures the angle of elevation as 41o | | | | |
|  | (a)  2 marks | Calculate the size of the angles marked θ and β.  ……………………………………………………………………………………………..  …………………………………………………………………………………………….. | | | |
| (b)  2 marks | Use the sine rule to calculate the distance BT, correct to the nearest metre.  ……………………………………………………………………………………………..  …………………………………………………………………………………………….. | | | |
| (c)  1 mark | Hence calculate the height of the tree, TY.  ……………………………………………………………………………………………..  …………………………………………………………………………………………….. | | | |

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| 2. | A plane leaves Kineton (K) and flies on a course 075o for a distance of 120 km to Lowe(L). It then flies on course of 160o for a distance of 140 km to Macy (M). | |
|  | a)  2 marks | Mark the information from above on the sketch. |
| b)  marks | Calculate the size of  ……………………………………………………………………………………………..  …………………………………………………………………………………………….. |
| (c)  marks | Calculate the distance KM.  ……………………………………………………………………………………………..  …………………………………………………………………………………………….. |
|  | (d)  marks | Find the bearing of M from K.  ……………………………………………………………………………………………..  …………………………………………………………………………………………….. |

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| Year  10 | Mathematics Test  Non-Right Triangle Trigonometry | |
| 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

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|  | Mathematics Test  Non-Right Triangle Trigonometry |
| Answer Sheet |

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| Short Answer | |
| 1 | or any combination of 2 |
| 2 | 7.5 cm |
| 3 |  |
| 4 | 26 km |
| 5 |  |
| 6 |  |
| 7 | 19.6 cm |
| 8 |  |
| 9 | 223 cm |
| 10 | 1 671 cm2 |

|  |  |
| --- | --- |
| Multiple Choice | |
| 1 | B |
| 2 | D |
| 3 | C |
| 4 | C |
| 5 | D |
| 6 | A |
| 7 | B |
| 8 | C |
| 9 | A |
| 10 | A |
| 11 | D |
| 12 | B |

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| Longer Answer | | |
| 1 | A |  |
|  | B |  |
|  | C |  |
|  |  |  |
| 2 | A |  |
|  | B |  |
|  | C |  |
|  | D |  |