|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year  9 | | Mathematics Test  Right Triangle Trigonometry | | Calculator Allowed |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper. | | | |
| 1. | What is the value of ?  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 2. | Evaluate  correct to 3 significant figures.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 3. | If  find the value of  to the nearest degree.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 4. | Find the value of *x*, correct to the nearest metre.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 5. | Find the value of , correct to the nearest degree.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 6. | Find the distance *PQ*, correct to 1 decimal place.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 7. | Find the size of , correct to the nearest degree.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 8. | Find the value of *p*, correct to 3 significant figures.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 9. | Wendy is on a hike. When she stops for lunch, she is near a tree which has a marker saying it is 89 m tall. She measures the shadow cast by the tree to be 23 m. What is the angle of elevation of the sun at that time?  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 10. | The mate on a cargo ship measures the angle of elevation from the deck of the ship to the top of a cliff to be 5o. The difference in height between the deck and the cliff top is 29m. How far is the ship from the cliff?    ..........................................................................................................................................................  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 11. | Uton walks from base (B) 1.4 km east and then 2.5 km south to a point P. What is the bearing of P from B?  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | | |
| 12. | From the top of a 60 metre tall building, Barry measures the angle of depression to a car on level ground to be 37o. How far, in a straight line is Barry from the car?  ....................................................................  ....................................................................  ....................................................................  .................................................................... | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year  9 | | Mathematics Test  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. | | | |
| 1. | In the diagram  A.  B.  C.  D. | | | |
| 2. | A.  B.  C.  D. | | | |
| 3. | Evaluate  correct to 2 decimal places.  A. 0.34 B. 0.49 C. 2.02 D. 4.45 | | | |
| 4. | If  calculate the value of to the nearest degree  A. 1o B. 27o C. 63o D. 70o | | | |
| 5. | Find the length of *AB* correct to one decimal place.   1. 0.5 m 2. 38.0 cm   C. 45.9 cm  D. 56.4 cm | | | |
| 6. | Find the value of, correct to the nearest degree.  A. 35o     1. 44o   C. 46o  D. 55o | | | |
| 7. | Find the value of *d* correct to one decimal place.   1. 4.7 2. 17.4   C. 67.2  D. 18.6 | | | |
| 8. | Find the size of  correct to the nearest degree.  A. 32o  B. 39o  C. 51o  D. 58o | | | |
| 9. | Find the distance *DE*, correct to the nearest 100 metres.  A. 10.0 m    B. 22.4 m  C. 26.8 m  D. 60.2 m | | | |
| 10. | The bearing of P from Q is  A. 040o  B. 050o  C. 310o  D. 320o | | | |
| 11. | From the top deck of a lighthouse, Kahlil measures the angle of depression of a yacht which is 240 m out to sea to be 70 o. How far is Kahlil in a straight line from the yacht?  A. 255 m  B. 659 m  C. 701 m  D. 745 m | | | |
| 12. | A plane flies due north from Georgetown (G) for 450km to Harrow (H). It then turns and flies due east for a distance of 240 km to Indira (I). What is the bearing of Georgetown from Indira?  A. 062o  B. 152o  C. 208o  D. 242o | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year  9 | | | Mathematics Test  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. | A hiker walks 500 m from the base of a vertical cliff on level ground, then measures the angle of elevation of the top of the cliff to be 21o. He then walks a further 500 m in the same direction and again measures the angle of elevation. | | | | |
|  | (a)  2 marks | Mark the information above on the diagram. | | | |
| (b)  2 marks | Calculate the height of the cliff.  ……………………………………………………………………………………………  …………………………………………………………………………………………… | | | |
| (c)  2 marks | What is the angle of elevation that he measures from the second position?  ……………………………………………………………………………………………  …………………………………………………………………………………………… | | | |

|  |  |  |
| --- | --- | --- |
| 2. | A plane leaves Adelaide and flies 1 200 km due north to Tyler Downs station. From there it flies on a bearing 248o. | |
|  | (a)  2 marks | Draw a sketch to show the information above. |
| (b)  2 marks | How far has it flown on the bearing 248o when it is due west of Adelaide?  ……………………………………………………………………………………………  ……………………………………………………………………………………………  …………………………………………………………………………………………… |
| (c)  3 marks | Altogether it flies 5 000 km on the bearing 248o. It then flies due east until it is south of Adelaide and then flies due north to return to Adelaide. How long was its round trip altogether?  ……………………………………………………………………………………………  ……………………………………………………………………………………………  ……………………………………………………………………………………………  …………………………………………………………………………………………… |

|  |  |  |
| --- | --- | --- |
| Year  9 | Mathematics Test  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

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

|  |  |
| --- | --- |
| Short Answer | |
| 1 |  |
| 2 | 24.5 |
| 3 | 42o |
| 4 | 161 m |
| 5 |  |
| 6 | 41.1 km |
| 7 | 47o |
| 8 | 641 m |
| 9 | 76o |
| 10 | 331 m from cliff. |
| 11 | Bearing is 149o |
| 12 | 99.7 m |

|  |  |
| --- | --- |
| Multiple Choice | |
| 1 | C |
| 2 | D |
| 3 | C |
| 4 | C |
| 5 | C |
| 6 | B |
| 7 | A |
| 8 | A |
| 9 | C |
| 10 | D |
| 11 | C |
| 12 | C |
| 13 |  |
| 14 |  |
| 15 |  |
| 16 |  |
| 17 |  |
| 18 |  |
| 19 |  |
| 20 |  |

|  |  |  |
| --- | --- | --- |
| Longer Answer | | |
| 1 | a |  |
|  | b |  |
|  | C |  |
| 2 | a |  |
|  | b |  |
|  | c |  |