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| Year  9 | | *Right Triangle Trigonometry* | Calculator Allowed |
| **Skills and Knowledge Assessed:**   * Use similarity to investigate the constancy of the sine, cosine and tangent ratios for a given angle in right - angled triangles (ACMMG223) * Apply trigonometry to solve right - angled triangle problems (ACMMG224) * Solve right- angled triangle problems including those involving direction and angles of elevation and depression (ACMMG245) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 1Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper. | | | |
|  | What is the value of  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | |
|  | Evaluate  correct to 2 decimal places.  ..........................................................................................................................................................    .......................................................................................................................................................... | | |
|  | If  find the value of  to the nearest degree.  ..........................................................................................................................................................    .......................................................................................................................................................... | | |
|  | Find the value of *x*, correct to the nearest metre.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | |
|  | Find the value of  , correct to the nearest degree.  .............................................................................  .............................................................................    .............................................................................  ............................................................................. | | |
|  | What is the value of *y*, correct to 1 decimal place?  .....................................................................  .....................................................................  ..................................................................... | | |
|  | Find the size of  correct to the nearest degree.    .....................................................................  .....................................................................  .....................................................................  ..................................................................... | | |
|  | Find the value of  correct to the nearest degree.  .....................................................................  .....................................................................  .....................................................................  ..................................................................... | | |
|  | Calculate the distance *YZ* (correct to 1 decimal place).    ...........................................................................  ...........................................................................  ...........................................................................  .......................................................................... | | |
|  | From a point 28 m from the base of the building, Miles measures the angle of elevation to be 64o. What is the height of the building?  ....................................................................  ....................................................................  ....................................................................  .................................................................... | | |
|  | A ship sails from *B* to *C* on a bearing of 260o for a distance of 465 km at which time it is due east of A.  How many kilometres is *A* south of *B*?  ....................................................................  ....................................................................  ....................................................................  .................................................................... | | |
|  | Elvis hikes cross country from Motown (*M*) to Nashville (N) a distance of 20.3 km.  Orlean (O) is 15.2 km west of Motown and due south of Nashville. What is the bearing of Nashville from Motown?  ……….…………………………………………  ………………………………………………….  …….……………………………………………  …………………………………………………. | | |
|  | Find the length of the hypotenuse of  ……….…………………………………………  ………………………………………………….  …….……………………………………………  …………………………………………………. | | |
|  | From the top deck of a lighthouse, Jessie measures the angle of depression of a yacht which is 160 m out to sea to be 55 o. How far is Jessie in a straight line from the yacht?  .…………………………………………………  ………………………………………………….  …….……………………………………………  …………………………………………………. | | |
|  | Find the distance AY in the diagram.  .…………………………………………………  .…………………………………………………  ………………………………………………….  …….……………………………………………  …………………………………………………. | | |

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| Year  9 | | *Right Triangle Trigonometry* | 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. | | | |
|  | In the diagram  A.  B.  C.  D. | | |
|  | What is the value of  A.  B.  C.  D. | | |
|  | Evaluate correct to 2 decimal places.  A. 0.56 B. 0.67 C. 0.83 D. 1.48 | | |
|  | If  calculate the size of angle *X* to the nearest degree  A. 37o B. 53o C. 121o D. 149o | | |
|  | Find the value of *k* correct to one decimal place.    A. 19.5 cm  B. 21.0 cm    C. 48.2 cm  D. 128.7 cm | | |
|  | Find the length of *BC* correct to one decimal place.  A. 18.7 m  B**.** 19.5 cm  C. 65.4 cm  D. 237.1 cm | | |
|  | Find the value of, correct to the nearest degree.  A. 28o    B. 41o  C. 49o  D. 62o | | |
|  | Find the value of *d* correct to one decimal place.  A. 1.3  B. 2.4  C. 2.6  D. 3.9 | | |
|  | Find the size of  correct to the nearest degree.  A. 37o  B. 39o  C. 51o  D. 53o | | |
|  | Find the height of the tree (*h*), correct to the nearest 10th of a metre.  A. 7.7 m  B. 8.1 m  C. 23.8 m  D. 76.9 m | | |
|  | The bearing of A from B is 216o.  Which diagram shows this? | | |
|  | What is the length of GH in the diagram?  A. 30 cm  B. 55 cm  C. 62 cm  D. 85 cm | | |
|  | A plane leaves Perth (*P*) and flies on a bearing 116o to Decuna (D).  Encinada is 360 km due east of Perth and due north of Decuna.  How far is Decuna from Perth?  A. 324 km  B. 401 km  C. 738 km  D. 821 km | | |
|  | A section of a roof truss is shown. What is the slope of the roof (  )?  A. 19o  B. 20o  C. 41o  D. 77o | | |
|  | Find the distance in a straight line from the observer on the top of the cliff to the boat.    A. 40.7 m  B. 76.8 m  C. 90.6 m  D. 96.0 m | | |

# 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

13. A B C D

14. A B C D

15. A B C D

*Right Triangle Trigonometry*

# ANSWERS

|  |  |
| --- | --- |
| Section 1 ( 1 mark each) | |
|  | Working and Answers |
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| --- | --- | --- |
| Section 2 (1 mark each) | | |
|  | Working | Answers |
|  |  | C |
|  |  | A |
|  | From Calculator. | D |
|  |  | B |
|  |  | D |
|  |  | C |
|  |  | A |
|  |  | B |
|  |  | D |
|  |  | D |
|  |  | A |
|  |  | C |
|  |  | B |
|  |  | B |
|  |  | C |

# Right Triangle Trigonometry

# 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

13. A B C D

14. A B C D

15. A B C D