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| *School Name*  *Mathematics Test 2017* | | | |
| Year 9 | | *Right Triangle Trigonometry* | Calculator  Allowed Test |
| **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 1** Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper. | | | |
|  | In the diagram, what is the value of  ……………………………………………………  …………………………………………………… | | |
|  | Calculate  correct to 3 significant figures.  ……………………………………………………………………………………………....  ………………………………………………………………………………………………. | | |
|  | Write an expression for  ………………………………………………  ……………………………………………....  …………………………………………… | | |
|  | What is the distance *AB*?  (Answer correct to 1 decimal place.)  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | Find the size of  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | Find the value of *g* correct to one decimal place.  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | Find the size of  correct to the nearest degree.  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | Find the length of *PQ* correct to one decimal place.    ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | What is the value of  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | A helicopter (*B*) is hovering directly above *C* which is 500 m from *A* on level ground.  Radar at A measures the direct distance to the helicopter to be 650 m.  What is the angle of elevation of *B*, when viewed from *A*?  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | *EC* = 63 km and *FG* = 78 km.  What is the bearing of *G* from *E*?  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | A geographer at Angel Falls, hikes 172.8 m back from the base of the falls and measures the angle of elevation of the top of the falls to be 80o.  Use this information to calculate the height of Angel Falls.  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | What is the value of *d*?  (Answer to nearest 10th metre.)  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | In    Calculate the distance *TU* to the nearest mm.  ………………………………………………  ………………………………………………  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |
|  | Point *A* is 2500 km due east of point *C*.  Point *B* is between A and C and is due south of  point *P*.  Point *A* is 1200 m from *P* on a bearing of 120o.  What is the distance *CB*?  ………………………………………………  ………………………………………………  ………………………………………………  ……………………………………………....  ………………………………………………  ………………………………………………. | | |

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| Year 9 | | *Right Triangle Trigonometry* | Calculator Allowed |
| Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Section 2** Multiple 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, what is the value of  A.  B.  C.  D. | | |
|  | A. 7.39 B. 9.46 C. 15.23 D. 19.49 | | |
|  | In this triangle, which expression is equal to  A.  B.  C.  D. | | |
|  | A. 21 B. 43 C. 47 D. 69 | | |
|  | What is the value of *w*?  A. 44.5  B. 52.5  C. 71.2  D. 99.1 | | |
|  | Find the size of , correct to the nearest degree.    A. 32o  B. 39o  C. 51o  D. 58o | | |
|  | Find the length of *DE*, correct to the nearest mm.  A. 14.3 cm  B. 22.9 cm  C. 43.2 cm  D. 51.0 cm | | |
|  | Find the value of  A. 37o  B. 41o  C. 49o  D. 53o | | |
|  | Find the value of *m*, to the nearest 10th cm.  A. 33.9 cm  B. 40.0 cm  C. 54.3 cm  D. 75.5 cm | | |
|  | Calculate the angle of elevation of *P* from *A*.  A. 28o  B. 32o  C. 58o  D. 62o | | |
|  | Find the height of the building, correct to the nearest 10 cm.    A. 11.1 m  B. 17.3 m  C. 18.9 m  D. 22.6 m | | |
|  | Find the value of z correct to 1 decimal place.  A. 40.8 m  B. 49.7 m  C. 96.5 m  D. 106.5 m | | |
|  | What is the bearing of *L* from *K* ?  A. 049o  B. 131o  C. 139o  D. 221o | | |
|  | Point *B* is 120 km due east of point *A.*  Point *B* is also due north of point *C*.  Point *C* is on a bearing 110o from point *A*.  What is the distance *AC*?  A. 128 km  B. 137 km  C. 330 km  D. 351 km | | |
|  | Find the length of *DC*.  A. 9.6 cm  B. 12.0 cm  C. 14.5 cm  D. 16.4 cm | | |

*School Name*

*Mathematics 2017*

*Multiple Choice Answer Sheet*

*Right Triangle Trigonometry*

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

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| *School Name*  *Mathematics Test 2017* | | |
| Year 9 | *Right Triangle Trigonometry* | Non Calculator Section |

ANSWERS

| Question | Working and Answer |
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| *School Name*  *Mathematics Test 2017* | | |
| Year 9 | *Right Triangle Trigonometry* | Calculator Allowed  Multiple Choice  Section |

ANSWERS

|  |  |  |
| --- | --- | --- |
| Question | Working | M C Answer |
|  |  | **A** |
|  |  | **B** |
|  |  | **C** |
|  |  | **D** |
|  |  | **C** |
|  |  | **C** |
|  |  | **B** |
|  |  | **A** |
|  | + | **B** |
|  |  | **D** |
|  |  | **B** |
|  |  | **D** |
|  |  | **C** |
|  |  | **A** |
|  |  | **A** |

*School Name*

*Mathematics 2017*

*Multiple Choice Answer Sheet*

*Right Triangle Trigonometry*

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