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| Year  9 | | *Basic Measurement* | Non Calculator |
| **Skills and Knowledge Assessed:**   * Choose appropriate units of measurement for area and volume and convert from one unit to another (ACMMG195) * Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites (ACMMG196) * Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving circumference and area (ACMMG197) * Investigate very small and very large time scales and intervals (ACMMG219) * Express numbers in scientific notation (ACMNA210) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 1Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper. | | | |
|  | Use a ruler to measure the width of the interval AB to the nearest cm.    …………………………………………………………………………………………………………… | | |
|  | How many minutes are there in  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | What is the perimeter of the square?  …………………………………………  ………………………………………….  …………………………………………  …………………………………………. | | |
|  | Warren walks 1200 metres to the bus stop in the morning and then 900 metres from the bus to school.  How many kilometres does he walk altogether on his way to school?  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | How many rpm is this tachometer indicating?  ………………………………………………………….  …………………………………………………………. | | |
|  | Find the perimeter of this parallelogram.  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | A park has an area of 4.6 hectares, of which 12 000 m2 is mowed. What area is not mowed?  Answer in hectares.  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | Find the area of this rectangle.  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | Find the perimeter of this trapezium.  …………………………………………………  …………………………………………………  ………………………………………………… | | |
|  | The 1st Jan 2001 was the first day of the third millennium of the common era.  What will be the date of the last day of the third millennium?  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | Write the number 870 000 000 000 in standard notation.  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | Find the area of the shape shown.  ……………………………………………  ……………………………………………  ……………………………………………  ……………………………………………. | | |
|  | Round the number 0.058728 correct to 2 significant figures.  …………………………………………………………………………………………………………… | | |
|  | A grain of sand has a diameter of  Write this in millimetres, as a normal decimal.  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | Sally is working as an editor on a magazine and she takes on average 35 minutes to edit an article. She can only work on editing for an hour and forty minutes at a time before she must take a twenty minute break from the computer. She uses the breaks to do other duties, to have her lunch and to take a coffee break.  If she works a normal day of 7 hours, five days a week, how many articles would she edit in a week?  ……………………………………………  ……………………………………………  ……………………………………………  ……………………………………………. | | |

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| Year  9 | | *Basic Measurement* | 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. | | | |
|  | What is a reasonable estimate for the height of this desk?    A. 5 centimetres.  B. 7.5 centimetres.  C. 50 centimetres  D. 75 centimetres | | |
|  | Which measurement is the same as 800 grams?  A. 0.08 kg B. 0.8 kg C. 8 kg D. 8 tonnes | | |
|  | Which would be a reasonable estimate for the mass of an orange?  A. 6 grams  B. 60 grams  C. 600 grams  D. 6 kilograms | | |
|  | Tracey buys a bottle of cola which holds of 1.25 litres.  How many 250 ml glasses could she fill from the bottle?  A. 5  B. 7  C. 15  D. 50 | | |
|  | What is the length of the rectangle being measured below to the nearest 10 mm?    A. 2.2 mm B. 22 mm C. 220 mm D. 2200 mm | | |
|  | A leaf on a bottlebrush is 8 mm long and a leaf on an oak tree is 24 cm long.  How many times longer is the oak leaf, compared to the bottlebrush?    A. 3 times longer. B. 6 times longer.  C. 16 times longer D. 30 times longer. | | |
|  | What is the perimeter of the rhombus?  A. 40 cm  B. 56 cm  C. 80 cm  D. 384 cm | | |
|  | What is the area of the triangle?  A. 216 cm2  B. 270 cm2  C. 360 cm2  D. 432 cm2 | | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Questions 9 – 10 refer to the train timetable below.** | | | | | | Perth Station | 5:23 am | 6:27 am | 6:54 am | 7:08 am | | City West | 5:25 am | 6:29 am | 6:56 am | 7:10 am | | West Leederville | 5:27 am |  | 6:58 am | 7:12 am | | Subiaco | 5:29 am | 6:32 am | 7:00 am | 7:14 am | | Daglish | 5:30 am | 6:33 am | 7:01 am | 7:15 am | | Shenton Park | 5:32 am |  | 7:03 am | 7:17 am | | Karrakatta | 5:34 am | 6:36 am | 7:05 am | 7:19 am | | Loch Street | 5:35 am | 6:37 am | 7:06 am | 7:20 am | | Claremont | 5:37 am | 6:39 am | 7:08 am | 7:22 am | | Swanbourne | 5:39 am |  | 7:10 am |  | | Grant Street | 5:40 am |  | 7:11 am |  | | Cottesloe | 5:42 am |  | 7:13 am |  | | Mosman Park | 5:44 am |  | 7:15 am |  | | Victoria Street | 5:45 am |  | 7:16 am |  | | North Fremantle | 5:47 am |  | 7:18 am |  | | Fremantle | 5:51 am | 6:47 am | 7:22 am | 7:31 am | | | |
|  | The 6: 27 and the 7:08 am trains from Perth are express trains.  Which takes the least time to get to Freemantle?  A. The 6.27 train takes 5 minutes less than the 7:08 train.  B. The 6.27 train takes 3 minutes less than the 7:08 train.  C. The 6.27 train takes 3 minutes more than the 7:08 train.  D. The 6.27 train takes 5 minutes more than the 7:08 train. | | |
|  | Jean catches a train from City West. She needs to reach Mosman Park station by 7:10 am; in order to make a 7:15 am appointment nearby.  What is the latest time she could catch a train from City West?  A. 5:25 am B. 6:29 am C. 6:56 am 7:10 am | | |
|  | What is the circumference of the circle shown?  A. 10.1 cm B. 20.1 cm  C. 32.2 cm D. 40.2 cm | | |
|  | The distance from Earth to a meteorite is  Write this distance as a normal numeral.  A. 2 450 000 km B. 24 500 000 km  C. 245 000 000 km D. 2 450 000 000 km | | |
|  | A calculator gives the answer to a calculation as 38.48451001.  What is this answer when rounded to three significant figures?  A. 38.4 B. 38.5 C. 38.484 D. 38.485 | | |
|  | A single *Escherichia coli* bacteria has a mass of  grams.  How many of these bacteria would be needed to have a mass of 1 gram?  A. 6 250 000  B. 16 000 000  C. 1 600 000 000  D. 6 250 000 000 | | |
|  | A car has a mass of 1 200 kg, not including fuel.  Its fuel tank has a capacity of 50 litres and it uses fuel at a rate of 8 litres/100 km.  One litre of fuel has a mass of 0.8 kg.  If it starts with a full tank, by what percentage does its mass decrease when the car travels 500 km?  A. 2.6% B. 3.2% C. 4.2% D. 32% | | |

# Basic Measurement

# 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

*Basic Measurement*

# ANSWERS

|  |  |
| --- | --- |
| Section 1 ( 1 mark each) | |
|  | Working and Answers |
|  | 9 cm (to nearest cm) |
|  |  |
|  |  |
|  | Dist = 900 m + 1 200 m = 2 100 m = 2.1 km. |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | The last day is 31st Dec 3000. |
|  |  |
|  |  |
|  |  |
|  |  |
|  | In a week she works 35 hours.  Each two hour block has 1 hour and 40 min of editing time. |

|  |  |  |
| --- | --- | --- |
| Section 2 (1 mark each) | | |
|  | Working | Answers |
|  | Desk would be just under a metre tall, so 75 cm is best choice. | D |
|  |  | B |
|  | 6 g is too small and 600 g is over half a kg, so 60 g is best. | B |
|  |  | A |
|  | It is 22 cm, which is 220 mm. | C |
|  | 24 cm = 240 mm | D |
|  |  | C |
|  |  | A |
|  | 6:27 train takes till 6:47 ie 20 minutes.  7:08 train takes till 7:31 ie 23 minutes.  The 6.27 train takes 3 minutes less than the 7:08 train. | B |
|  | She would have to take the 5:25 as the 6:56 train arrives too late and the 6:29 and 7:10 trains doesn’t stop at MP. | A |
|  | Circumference = | B |
|  |  | D |
|  | 38.48451001 = 38.5 to 3 sf. | B |
|  |  | C |
|  |  | A |

# Basic Measurement

# 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