High School Mathematics Test 2013

Year 7

Metric Units

Non Calculator Section

Name_____

Skills and Knowledge Assessed:

- Connect decimal representations to the metric system (ACMMG135)
- Convert between common metric units of length, mass and capacity (ACMMG136)
- Solve problems involving the comparison of lengths and areas using appropriate units (A CMMG137)
- Connect volume and capacity and their units of measurement (ACMMG138)
- Solve problems involving duration, including using 12-and 24-hour time within a single time zone (ACMMG199)
- Interpret and use timetables (ACMMG139)

Answer all questions in the spaces provided on this test paper by:

Writing the answer in the box provided.

or

Shading in the bubble for the correct answer from the four choices provided.

Show any working out on the test paper.

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1. Four students in Mrs Darkes class measured the length of a desk as part of an assignment. Their four answers are shown below.
   Which one had a different measurement to the others?

   ☐ Blake – 350 cm ☐ Candice – 0.0035 km

   ☐ Deandra – 35 000 mm ☐ Essie – 3.5 m

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2. A classroom was measured as being 7.25 m long by 5.34 m wide.
   A builder needs these measurements in millimetres.
   What does the classroom measure in millimetres?

   ☐ mm long by ☐ mm wide.

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3. In January Freda measured her mass as being 56.5 kg.
   By the month of May, she had increased her mass by 800 grams.
   What was her mass in May?

   Freda's mass in May = ☐ kg.

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4. Kelly pours herself a drink of water from a full jug which holds 2.2 litres.
   She fills a cup which holds 350mL.
   How much water remains in the jug?

   ☐ 347.8 mL ☐ 1.3 L ☐ 1.85 L ☐ 2.165 L

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5. Sandra needs to cut pieces of fabric for a quilt, using a tape measure to measure with.
   Which unit would be the best to use?

   ☐ micrometres ☐ millimetres ☐ centimetres ☐ decimetres

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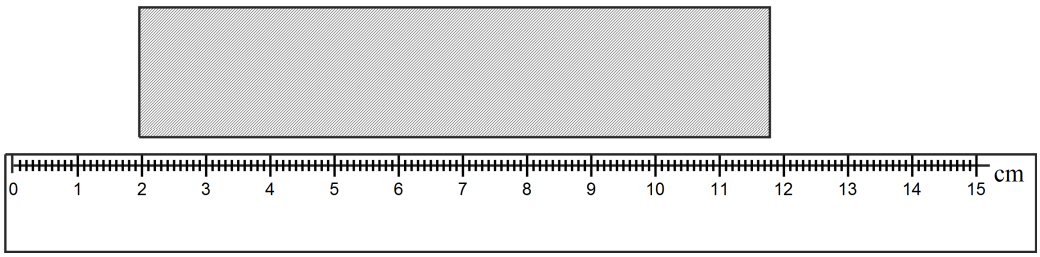
6. Catalina has a large dog.
Which of the following could be the mass of her dog?

- ☐ 5 kg.
- ☐ 25 kg.
- ☐ 125 kg.
- ☐ 250 kg.

7. What is the approximate length of the shaded rectangle, according to the ruler shown?



☐ 9.7 mm ☐ 97 mm ☐ 11.7 mm ☐ 117 mm

8. Pesila makes enough juice to fill a container which has a volume of 2 500 cm^3.
How many litres of juice is this?

☐ 2.5 L ☐ 25 L ☐ 250 L ☐ 2 500 L

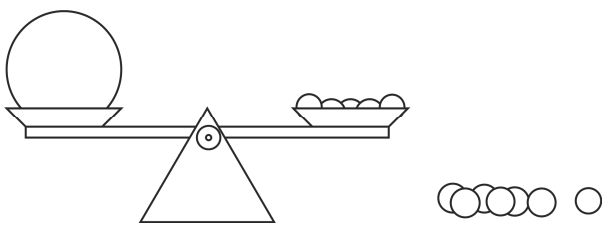
9. Uma's lunch box is marked as having a capacity of 1.5 litres.
She carries a drink container in the box which has a capacity of 640 mL.
About how much space is left in the lunch box?

☐ mL.

10. When travelling to work, Mick walks 250 metres, then travels 2.42 km on a bus and finally walks another 180 metres to get to work.
How far does he travel altogether when travelling to work?

☐ km.

11. Harry places a sphere which has a mass of 4 kg on one end of a balance beam.
He places small spheres of mass 250 grams on the other end.
How many small spheres would be needed to balance the large sphere?

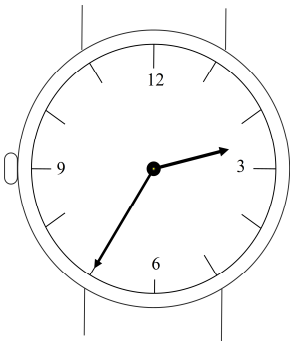


☐ small spheres.

12. Mr Kelly trains the Mansfield football team and he sends them for 20 sprints in each training session.
If each sprint lasts for 20 seconds, how long do they spend sprinting?

☐ minutes and ☐ seconds.

13. Hazel arrives home one afternoon at the time shown on her watch.

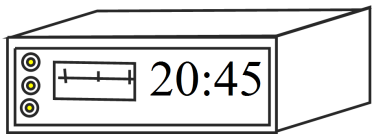


She went out again at 6:30 pm.

How long was she at home?

- ☐ 3 hours 35 min
- ☐ 3 hours 55 min
- ☐ 4 hours 5 min
- ☐ 4 hours 35 min

14. Jasmine was setting her alarm at the time shown.
She wants to get eight hours sleep and allow half an hour to get to sleep.
What time should she set the alarm for the next morning?



☐ : ☐

High School Mathematics Test 2013

Year 7

Metric Units

Calculator Allowed Short Answer Section

Name_____

Answer all questions in the spaces provided on this test paper by:
Writing the answer in the box provided.
or
Shading in the bubble for the correct answer from the four choices provided.
Show any working out on the test paper. Calculators are allowed.

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1. Which amount is equivalent to 5.28 L?

☐ 52.8 mL ☐ 528 mL ☐ 5 280 mL ☐ 52 800 mL

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2. Kane built a billy-cart during his holidays.
In one day he rode it down a hill which was 350 m long, twenty times.
How far did he ride the billy-cart in that day?

☐ 700 m ☐ 0.7 km ☐ 7 km ☐ 70 km

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3. Keira made 30 cakes for a fete, which used 4 eggs in each cake.
The eggs had a mass of 50 g each.
What was the total mass of eggs that she used for the cakes?

☐ 0.6 kg ☐ 6 kg ☐ 60 kg ☐ 600 kg

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4. Which two units would be appropriate to measure the distance when you run a race which is three laps of an oval?

☐ kilometres or centimetres ☐ millimetres or centimetres
☐ metres or kilometres ☐ millimetres or kilometres

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5. A box of fruit has a total mass of 35 kg.
The mass of the fruit itself is 34.25 kg.
What is the mass of the box (in grams)?

Mass of box = ☐ grams.

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6. Karl swims 45 laps of a pool which is 25 metres long.
Leo swims 1.2 kilometres in open water.
Who swims the furthest, and by how many metres?

☐ swims the furthest by ☐ metres.

7. Terri is writing a summary of some metric conversions.
Only one of her conversions is correct.
Which one is correct?

- ☐ 100 metres (mm) = 1 kilometre (km)
- ☐ 100 millilitres (mL) = 1 litre (L)
- ☐ 10 000 grams (g) = 1 kilogram (kg)
- ☐ 100 centimetres (cm) = 1 metre (m)

8. Louis wants to measure the mass of his car. Which should he use?

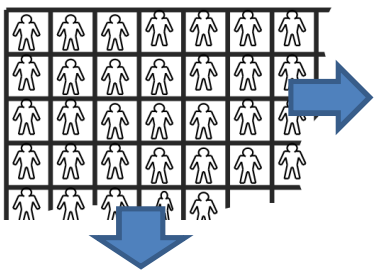
- ☐ A bathroom scale marked in half kilogram divisions.
- ☐ A kitchen scale marked in 10 gram divisions.
- ☐ A public weighbridge marked in 100 kilogram divisions.
- ☐ A stock scale marked in 10 kilogram divisions.

9. Kings Park is a park in Perth which has an area of 4.06 square kilometres.
Given that 1 square kilometre = 1 000 000 m^2 and 1 hectare = 10 000 m^2, work out the area of Kings Park in hectares.

☐ hectares.

10. A particular stamp has an area of 2.5 cm^2.
The stamps are produced on a sheet which has an area of 0.5 m^2.
How many stamps are on the sheet if there is no wasted space?

- ☐ 200
- ☐ 500
- ☐ 2 000
- ☐ 5 000



11. A T20 cricket match starts at 7:20pm and finishes at 10:10 pm. What is the duration of the match?

☐ hours and ☐ minutes.

12. A DVD movie has a playing time of 1 hour and 58 minutes.
Wendy starts watching the movie at 19:43.
At what time will the movie end, if she pauses it for 18 minutes in the middle to get a snack?

☐ : ☐

13. Yania works four shifts in a week.
The total time of the four shifts is 32 hours.
The times for her first three shifts were :

7:15 (seven hours and fifteen minutes)
8:35 (eight hours and thirty five minutes)
7:46 (seven hours and forty six minutes)

What was the time for her last shift?

- ☐ 7 hours and 24 minutes
- ☐ 7 hours and 36 minutes
- ☐ 8 hours and 24 minutes
- ☐ 8 hours and 36 minutes

Questions 14 – 16 refer to the morning suburban train timetable below.

Cromwell	6:33	7:03	7:33	7:44	8:06
Wyatt	6:38	7:08	7:38	7:49	8:11
Tudor	6:45	7:15		7:56	
Weston	6:51	7:21	7:50	8:02	8:23
Harris	6:54	7:24		8:05	
Bryan	6:59	7:29	7:57	8:10	8:30
Woolsey	7:07	7:37		8:18	
Brereton	7:16	7:46	8:13	8:27	8:46
Poole	7:21	7:51		8:32	
Rochford	7:27	7:57		8:38	
Richmond	7:31	8:01	8:25	8:42	8:58
Seymour	7:37	8:07	8:31	8:48	9:04
Gardiner	7:42	8:12	8:36	8:53	9:09

14. How long does the 6:33 train from Cromwell take to get to Woolsey?

_____ minutes.

15. Henry needs to be at Seymour Station by 8:40am. What is the latest time he could leave Tudor if he wants to be on time?

☐ 6:45am ☐ 7:15 am ☐ 7:50 am ☐ 7:56 am

16. How many minutes less does it take to get from Cromwell to Gardiner on the 8:06 train compared to the 7:44 Train?

_____ minutes.

High School Mathematics Test 2013

Year 7

Metric Units

ANSWERS

Non Calculator Section

1.	Deandra – 35 000 mm
2.	7 250 by 5 340
3.	56.5 + 0.8 = 57.3 kg
4.	1.85 L
5.	millimetres
6.	25 kg.
7.	97 mm
8.	2.5 L

9.	860 mL
10.	2.85 km.
11.	16 small spheres
12.	400 s = 6 minutes and 40 seconds
13.	3 hours 55 min
14.	05:15

Calculator Allowed Section

1.	5 280 mL
2.	7 km
3.	6 kg
4.	metres or kilometres
5.	750 grams
6.	Leo swims the furthest by 75 metres.
7.	The last one is correct.
8.	A public weighbridge marked in 100 kilogram divisions.

9.	406 hA
10.	2 000
11.	2 hours and 50 min
12.	21:59
13.	8 hours and 24 minutes
14.	34 minutes
15.	7:15 am
16.	6 minutes