Steady Steps Maths

FREE UNIT TEST · TOPIC 1

FREE SAMPLE · UNIT TEST A

Ratios & Rates

Unit Test A · 40 marks · about 40 minutes

GRADE 6



Common Core 6.RP.A.1–3

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Name _____ Date _____

UNIT TEST A

Ratios & Rates

40 marks · about 40 minutes · Common Core 6.RP.A.1–3

Name _____ **Date** _____

Instructions

- Answer **every** question in the space given.
- Show your working: in Sections B and C you get marks for your method, even if the final answer is wrong.
- The number in brackets, like [2], shows how many marks a question is worth.
- You have about 40 minutes. A calculator is **not** needed.
- Check your answers if you finish early.

Your score

Section	Questions	Marks	Your score
A · Quick questions	1–10	10	
B · Show your working	11–16	17	
C · Problem solving	17–18	13	
Total		**40**	

Percentage: _____ % 85%+ excellent · 65–84% good · 45–64% keep practising · below 45% revise the packs first

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SECTION A

Quick questions

1 mark each · write your answer in the box

1. A club has 8 boys and 10 girls. Write the ratio of girls to boys. [1]

Answer

2. Write 30 : 18 in its simplest form. [1]

Answer

3. A bag has 4 red beads and 6 blue beads. What fraction of the beads are red? [1]

Answer

4. Find the missing number: 6 : 5 = ☐ : 15 [1]

Answer

5. A car travels 220 km in 4 hours at a steady speed. How far does it travel in 1 hour? [1]

Answer

6. 5 pens cost 3.75. How much does one pen cost? [1]

Answer

7. Convert 6.6 m to centimetres. [1]

Answer

8. How many minutes are in 2.5 hours? [1]

Answer

9. Write 1,400 g in kilograms. [1]

Answer

10. Which is the better buy? **A:** 5 for 9.00 **B:** 9 for 14.40 [1]

Answer

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SECTION B Show your working

Marks are given for your method

11 Share 63 stickers between Amal and Dina in the ratio 5 : 2. How many does each get? [2]

Answer

12 Complete the ratio table. Rice and water are always mixed in the same ratio. [4]

cups of rice	2	4	8		
cups of water	3			21	30

Answer

13 A recipe for 2 people uses 140 g of flour. How much flour is needed for 6 people? [2]

Answer

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14 Juice comes in a 400 ml bottle for 2.40 or a 1000 ml bottle for 7.00. Which is better value? Show your working. [3]

Answer

15 Huda cycles at 12 km per hour. How long does it take her to cycle 15 km? Give your answer in hours and minutes. [3]

Answer

16 A jug holds 2.5 litres. How many 300 ml glasses can be completely filled from it? [3]

Answer

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SECTION C Problem solving

Longer questions with several steps

17 Green paint is made by mixing blue and yellow paint in the ratio 5 : 1. Sami needs 18 litres of green paint. [7]

(a) How many litres of blue and of yellow paint does he need?

(b) Blue paint is sold in 2.5 litre tins for 9.00 each. How much does he spend on blue paint?

(c) Yellow paint is sold in 2 litre tins for 10.00 each. How much does he spend on yellow paint?

Answer

18 Water flows into a tank at a steady rate: 5 litres every 7 minutes. [6]

(a) Complete the table.

(b) How long does it take to collect 30 litres?

(c) How many litres flow in 1 minute?

minutes	7	14	35	56
litres	5			

Answer

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Mark scheme

For parents · give the marks shown; method marks can be given even if the final answer is wrong

Tip: Give method marks generously when the working shows the right idea. If a mistake early on is carried through correctly, give the later marks.

Q	Answer	Marks	How to award the marks
1	10 : 8 (or 5 : 4)	1	Order matters: girls first.
2	5 : 3	1	Must be fully simplified.
3	2/5	1	Accept an equivalent fraction.
4	18	1	
5	55 km	1	
6	0.75	1	
7	660 cm	1	
8	150 minutes	1	
9	1.4 kg	1	
10	B (1.80 vs 1.60 each)	1	Answer must match correct unit prices.
11	Amal 45, Dina 18	2	1 mark for 63 ÷ 7 = 9; 1 mark for both answers.
12	water 6, 12; rice 14, 20	4	1 mark for each correct value (4 values).
13	420 g	2	1 mark for 140 ÷ 2 = 70 g per person (or another correct scaling step).
14	the smaller bottle (0.60 vs 0.70 per 100 ml)	3	1 mark for each correct unit price (per ml or per 100 ml); 1 mark for the correct conclusion.
15	1 hour 15 minutes	3	1 mark for 15 ÷ 12; 1 mark for 1.25 hours; 1 mark for hours and minutes.
16	8 glasses	3	1 mark for 2.5 L = 2,500 ml; 1 mark for dividing by 300; 1 mark for the whole-number answer.
17	(a) blue 15 L, yellow 3 L (b) 6 tins = 54.00 (c) 2 tins = 20.00	7	(a) 1 mark each. (b) 1 mark for the number of tins (rounded up), 1 for the cost, 1 for working shown. (c) 1 mark for tins, 1 for cost.
18	(a) 10, 25, 40 L (b) 42 minutes (c) 5/7 L	6	(a) 2 marks: all three correct (1 mark for two). (b) 2 marks: 1 for a correct method. (c) 2 marks: 1 for dividing litres by minutes.

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What to revise

Circle the questions your child lost marks on, then go back to the matching part of the pack

Questions	Skill	Revise in	✓ / ×
1	Writing ratios	Pack 1 · Understanding Ratios, Part 1	
2, 4	Simplest form	Pack 2 · Equivalent Ratios & Ratio Tables, Part 1	
3	Part-to-whole	Pack 1 · Understanding Ratios, Part 2	
5	Unit rates	Pack 3 · Unit Rates & Unit Price, Part 1	
6, 10, 14	Unit price	Pack 3 · Unit Rates & Unit Price, Part 3	
7, 9, 16	Metric length	Pack 4 · Converting Units, Part 1	
8	Converting time	Pack 4 · Converting Units, Part 2	
11	Sharing in a ratio	Pack 2 · Equivalent Ratios & Ratio Tables, Part 3	
12	Ratio tables	Pack 2 · Equivalent Ratios & Ratio Tables, Part 2	
13	Using unit rates	Pack 3 · Unit Rates & Unit Price, Part 4	
15	Speed, distance and time	Pack 3 · Unit Rates & Unit Price, Part 2	
17	Ratio problems with several steps	Pack 2 · Equivalent Ratios & Ratio Tables, Part 3 and Pack 3 · Unit Rates & Unit Price, Part 4	
18	Rates, tables and unit rates	Pack 2 · Equivalent Ratios & Ratio Tables, Part 2 and Pack 3 · Unit Rates & Unit Price, Part 1	

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