Steady Steps Maths

FREE UNIT TEST · TOPIC 2

FREE SAMPLE · UNIT TEST A

Factors, Multiples & Patterns

Unit Test A · 40 marks · about 40 minutes

GRADE 4



Common Core 4.OA.B.4, 4.OA.C.5

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Name _____ Date _____

UNIT TEST A Factors, Multiples & Patterns

40 marks · about 40 minutes · Common Core 4.OA.B.4 · 4.OA.C.5

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. Write all the factor pairs of 44. [1]

Answer

2. Is 9 a factor of 44? Write yes or no. [1]

Answer

3. List all the factors of 69. [1]

Answer

4. Write the first 5 multiples of 9. [1]

Answer

5. Is 89 a multiple of 3? Write yes or no. [1]

Answer

6. Is 99 prime or composite? [1]

Answer

7. Write all the prime numbers between 60 and 70. [1]

Answer

8. Start at 5 and add 9. Write the first 5 numbers. [1]

Answer

9. Find the missing number: 30, 38, 46, ___, 62 [1]

Answer

10. A pattern repeats: square, triangle, star, square, triangle, star, ... What is the 24th shape? [1]

Answer

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SECTION B Show your working

Marks are given for your method

11 Find all the factor pairs of 100. [2]

Answer

12 Look at these numbers: 37, 43, 57, 73, 77, 99 [3]
(a) Which of them are prime? (b) Choose one composite number and show it is composite with a factor pair.

Answer

13 Start at 3 and add 9. [3]
(a) Write the first 6 numbers. (b) What do you notice about whether the numbers are odd or even? (c) Explain why.

Answer

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14 Sami says, “39 is prime because it is odd.” [3]
(a) Is Sami right? Explain using a factor pair. (b) List all the factors of 39.

Answer

15 A tile pattern has 5 tiles in Step 1. Each new step has 2 more tiles than the step before. [2]
(a) How many tiles are in Step 4? (b) How many tiles are in Step 10?

Answer

16 96 chairs are put in equal rows with none left over. [4]
(a) Can there be 6 rows? (b) Can there be 7 rows? (c) List every number of rows from 3 to 12 that works.

Answer

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SECTION C Problem solving

Longer questions with several steps

17 Ziad bakes 36 cupcakes. [7]

(a) Write all the factor pairs of 36.

(b) Ziad puts the cupcakes in boxes with the same number in each box and none left over. Each box holds from 5 to 10 cupcakes. Which box sizes can Ziad use?

(c) Leen bakes 71 cupcakes. Can Leen put them in equal boxes, with more than 1 box and more than 1 cupcake in each box? Explain.

Answer

18 Sara has 35 marbles. Each week Sara gets 20 more. [6]

(a) Write how many marbles Sara has at the start and after each of the first 4 weeks.

(b) After how many weeks will Sara have 215 marbles? (c) What do you notice about the ones digits? Explain why this happens.

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	1 × 44, 2 × 22, 4 × 11	1	
2	no (44 ÷ 9 = 4 r 8)	1	
3	1, 3, 23, 69	1	
4	9, 18, 27, 36, 45	1	
5	no (89 ÷ 3 = 29 r 2)	1	
6	composite (3 × 33 or 9 × 11)	1	
7	61, 67	1	
8	5, 14, 23, 32, 41	1	
9	54 (add 8)	1	
10	star	1	
11	1 × 100, 2 × 50, 4 × 25, 5 × 20, 10 × 10	2	2 marks for all pairs; 1 mark if one pair is missing.
12	(a) 37, 43, 73 (b) e.g. 57 = 3 × 19	3	(a) 2 marks (1 if one is missing or extra). (b) 1 mark for a factor pair other than 1 × the number.
13	(a) 3, 12, 21, 30, 39, 48 (b) odd and even take turns (c) adding an odd number swaps odd and even	3	1 mark each part.
14	(a) No: 39 = 3 × 13, so it is composite (b) 1, 3, 13, 39	3	(a) 2 marks: 1 for “no”, 1 for a factor pair. (b) 1 mark.
15	(a) 11 (b) 23	2	1 mark each part.
16	(a) yes (6 × 16) (b) no (96 ÷ 7 = 13 r 5) (c) 3, 4, 6, 8, 12	4	(a) 1 mark. (b) 1 mark. (c) 2 marks (1 if one is missing or extra).
17	(a) 1 × 36, 2 × 18, 3 × 12, 4 × 9, 6 × 6 (b) 6, 9 (c) No: 71 is prime (factors 1 and 71 only)	7	(a) 2 (1 if one pair is missing). (b) 2 (1 if one is missing or extra). (c) 3: 1 for “no”, 1 for “prime”, 1 for “only factors 1 and 71”.
18	(a) 35, 55, 75, 95, 115 (b) 9 weeks (c) all end in 5: adding tens keeps the ones digit	6	(a) 2 (1 if one is wrong). (b) 2: 1 for a method, e.g. (215 − 35) ÷ 20. (c) 2: 1 for noticing, 1 for the reason.

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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, 11	All the factor pairs	Pack 1 · Factor Pairs, Part 2	
2	Is it a factor?	Pack 1 · Factor Pairs, Part 4	
3	Listing factors	Pack 1 · Factor Pairs, Part 3	
4	Multiples	Pack 2 · Multiples, Primes & Composites, Part 1	
5	Is it a multiple?	Pack 2 · Multiples, Primes & Composites, Part 2	
6, 12, 14	Prime or composite?	Pack 2 · Multiples, Primes & Composites, Part 3	
7	Prime numbers to 100	Pack 2 · Multiples, Primes & Composites, Part 4	
8	Follow the rule	Pack 3 · Number & Shape Patterns, Part 1	
9	Find the rule and missing numbers	Pack 3 · Number & Shape Patterns, Part 2	
10, 15	Shape patterns	Pack 3 · Number & Shape Patterns, Part 4	
13	What else do you notice?	Pack 3 · Number & Shape Patterns, Part 3	
16	Is it a factor?	Pack 1 · Factor Pairs, Parts 3 and 4	
17	Factors and primes in context	Pack 1 · Factor Pairs, Parts 2 and 4 and Pack 2 · Multiples, Primes & Composites, Part 3	
18	Number patterns	Pack 3 · Number & Shape Patterns, Parts 1 and 3	

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