Steady Steps Maths

FREE UNIT TEST · TOPIC 5

FREE SAMPLE · UNIT TEST A

Factors & Multiples

Unit Test A · 40 marks · about 40 minutes

GRADE 6



Common Core 6.NS.B.4

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Name _____ Date _____

UNIT TEST A

Factors & Multiples

40 marks · about 40 minutes · Common Core 6.NS.B.4

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. Circle the prime numbers: 27 59 39 77 [1]

Answer

2. List all the factors of 45. [1]

Answer

3. Write 54 as a product of primes using exponents. [1]

Answer

4. Which number has the prime factorization $2^2 \times 5$? [1]

Answer

5. Find the GCF of 20 and 30. [1]

Answer

6. Find the LCM of 3 and 4. [1]

Answer

7. What is the GCF of 9 and 14? [1]

Answer

8. Write $7(3 + 4)$ as a sum without brackets. [1]

Answer

9. What is the LCM of 4 and 8? [1]

Answer

10. What is the first prime number after 55? [1]

Answer

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SECTION B Show your working

Marks are given for your method

11 Use a factor tree to write 180 as a product of primes. Use exponents in your answer. [3]

Answer

12 Find the GCF of 48 and 72. Show your method. [3]

Answer

13 Find the LCM of 6 and 9. Show your method. [3]

Answer

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14 Write 20 + 32 as the GCF times a sum. [2]

Answer

15 Is the LCM of two numbers always their product? Use 6 and 9 to explain. [3]

Answer

16 Use the GCF to fill in the boxes: 12 + 30 = ☐(☐ + ☐) [3]

Answer

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SECTION C Problem solving

Longer questions with several steps

17 A florist has 40 roses and 60 tulips. She makes identical bouquets, using every flower. [7]

(a) What is the greatest number of bouquets she can make?

(b) How many roses and how many tulips are in each bouquet?

(c) Write 40 + 60 using the GCF.

Answer

18 Bus A leaves the station every 6 minutes and Bus B every 10 minutes. They both leave at 9:00. [6]

(a) When do they next leave together?

(b) How many times does Bus A leave after 9:00, up to and including the time they next leave together?

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	59	1	All primes and no others.
2	1, 3, 5, 9, 15, 45	1	All factors needed.
3	2×3^3	1	Any order.
4	20	1	
5	10	1	
6	12	1	
7	1	1	
8	21 + 28	1	
9	8	1	
10	59	1	
11	$2^2 \times 3^2 \times 5$	3	1 mark for a correct first split; 1 mark for all primes; 1 mark for exponent form.
12	24	3	1 mark for listing factors or prime factorizations ($2^4 \times 3$; $2^3 \times 3^2$); 1 mark for the shared primes; 1 mark for the GCF.
13	18	3	1 mark for listing multiples or using primes; 1 mark for a correct common multiple; 1 mark for the least one.
14	4(5 + 8)	2	1 mark for the GCF; 1 mark for the sum in brackets.
15	No: 6 × 9 = 54, but the LCM is 18	3	1 mark for the product; 1 mark for the LCM; 1 mark for the conclusion.
16	6(2 + 5)	3	1 mark for each correct box (the GCF must be used).
17	(a) 20 bouquets (b) 2 roses and 3 tulips (c) 20(2 + 3)	7	(a) 3 marks: 1 for recognising GCF, 1 for method, 1 for the answer. (b) 2 marks: 1 each. (c) 2 marks.
18	(a) 9:30 (after 30 minutes) (b) 5 times	6	(a) 4 marks: 1 for listing multiples, 1 for the LCM, 1 for method, 1 for the time. (b) 2 marks.

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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, 10	Prime or composite	Pack 1 · Prime Factorization, Part 1	
2, 5	Factors	Pack 2 · Greatest Common Factor, Part 1	
3	Prime factorization	Pack 1 · Prime Factorization, Part 3	
4	Rebuild the number	Pack 1 · Prime Factorization, Part 4	
6, 18	LCM	Pack 3 · Least Common Multiple, Part 1	
7	When the GCF is 1	Pack 2 · Greatest Common Factor, Part 3	
8	The distributive property	Pack 4 · Factoring with the GCF, Part 1	
9, 15	LCM shortcuts	Pack 3 · Least Common Multiple, Part 3	
11	Prime factorization	Pack 1 · Prime Factorization, Part 2 and 3	
12	GCF using primes	Pack 2 · Greatest Common Factor, Part 2	
13	LCM	Pack 3 · Least Common Multiple, Part 1 and 2	
14	Factor a sum using the GCF	Pack 4 · Factoring with the GCF, Part 2	
16	Missing numbers	Pack 4 · Factoring with the GCF, Part 3	
17	GCF in a problem	Pack 2 · Greatest Common Factor, Part 1 and Pack 4 · Factoring with the GCF, Part 2	

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