Steady Steps Maths

FREE UNIT TEST · TOPIC 8

FREE SAMPLE · UNIT TEST A

Expressions

Unit Test A · 40 marks · about 40 minutes

GRADE 6



Common Core 6.EE.A.2–4

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Name _____ Date _____

UNIT TEST A

Expressions

40 marks · about 40 minutes · Common Core 6.EE.A.2–4

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 Write an expression for “9 less than p”. [1]

Answer

2 Write an expression for “the product of 5 and x, plus 4”. [1]

Answer

3 In 4x + 7y + 6, what is the coefficient of y? [1]

Answer

4 What is the constant term in 5m + 19? [1]

Answer

5 Evaluate 5x + 1 when x = 8. [1]

Answer

6 Use $A = s^2$ to find the area of a square with sides of 9 cm. [1]

Answer

7 Simplify 5x + 6x. [1]

Answer

8 Expand 8(y + 7). [1]

Answer

9 Factor 28a + 21 using the GCF. [1]

Answer

10 Are 4(n + 1) and 4n + 1 equivalent? Write yes or no. [1]

Answer

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SECTION B Show your working

Marks are given for your method

11 Evaluate $6m + n^2$ when $m = 3$ and $n = 3$. [2]

Answer

12 Simplify $7m + 4 + 8m + 6$. [2]

Answer

13 Expand and simplify $4(4x + 3) + 4(x - 5)$. [3]

Answer

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14 Tickets cost 12 each, plus a booking fee of 4. [3]
(a) Write an expression for the cost of t tickets. (b) Find the cost of 5 tickets.

Answer

15 Use $S = 6s^2$ to find the surface area of a cube with edges of 2 cm. Show your working. [3]

Answer

16 (a) Substitute a = 2 into 4(2a + 1) and into 8a + 4. Do they give the same value? [4]
(b) Use the distributive property to show the two expressions are equivalent.

Answer

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SECTION C Problem solving

Longer questions with several steps

17 A rectangle has width w cm. Its length is 5 cm more than its width. [7]

(a) Write an expression for the length.

(b) Write an expression for the perimeter, then simplify it.

(c) Find the perimeter when w = 3.

Answer

18 A bike shop charges 19 plus 10 per hour. [6]

(a) Write an expression for the cost of h hours.

(b) How much do 3 hours cost?

(c) Huda pays 69. How many hours did she ride? Try values or work backwards.

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	p − 9	1	Not 9 − p.
2	5x + 4	1	
3	7	1	
4	19	1	
5	41	1	
6	81 cm²	1	
7	11x	1	
8	8y + 56	1	
9	7(4a + 3)	1	
10	no	1	e.g. n = 1 gives 8 and 5.
11	27	2	1 mark for substituting correctly (6 × 3 + 3²); 1 mark for the answer.
12	15m + 10	2	1 mark for each correct term.
13	20x − 8	3	1 mark for each bracket expanded correctly; 1 mark for the simplified answer.
14	(a) 12t + 4 (b) 64	3	(a) 2 marks: 1 for each term. (b) 1 mark.
15	24 cm²	3	1 mark for 2² = 4; 1 mark for × 6; 1 mark for the answer with units.
16	(a) both equal 20, so yes (b) 4(2a + 1) = 4 × 2a + 4 × 1 = 8a + 4	4	(a) 2 marks: 1 for each value. (b) 2 marks: 1 for multiplying both terms by 4, 1 for the result.
17	(a) w + 5 (b) 2w + 2(w + 5) = 4w + 10 (c) 22 cm	7	(a) 1 mark. (b) 4 marks: 2 for the perimeter expression, 2 for simplifying. (c) 2 marks: 1 for substituting.
18	(a) 19 + 10h (b) 49 (c) 5 hours	6	(a) 2 marks. (b) 2 marks: 1 for substituting. (c) 2 marks: 1 for a correct method.

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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, 2	Words to expressions	Pack 1 · Writing Expressions, Part 1	
3, 4	Parts of an expression	Pack 1 · Writing Expressions, Part 3	
5	Evaluating, one variable	Pack 2 · Evaluating Expressions, Part 1	
6, 15	Using formulas	Pack 2 · Evaluating Expressions, Part 3	
7, 12	Combine like terms	Pack 3 · Equivalent Expressions, Part 1	
8, 13	Expand brackets	Pack 3 · Equivalent Expressions, Part 2	
9	Factor using the GCF	Pack 3 · Equivalent Expressions, Part 3	
10, 16	Equivalent or not?	Pack 3 · Equivalent Expressions, Part 4	
11	Evaluating, two variables	Pack 2 · Evaluating Expressions, Part 2	
14, 18	Expressions for situations	Pack 1 · Writing Expressions, Part 4 and Pack 2 · Evaluating Expressions, Part 1	
17	Writing and simplifying expressions	Pack 1 · Writing Expressions, Part 4 and Pack 3 · Equivalent Expressions, Part 2	

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