2.14 Early Algebra: 30-minute Pack

GL ASSESSMENT GL · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Simplify 8a + 7b + 8a - 2b.

- [ ] A) 16a + 7b
- [ ] B) 16a - 5b
- [ ] C) 16a + 9b
- [ ] D) 16a + 5b
- [ ] E) 21ab

---

2 Solve 4x - 2 = 26.

- [ ] A) 7
- [ ] B) 8.5
- [ ] C) 6
- [ ] D) 8
- [ ] E) 4.5

---

3 Solve 4x - 11 = 5.

- [ ] A) 12.25
- [ ] B) 16
- [ ] C) 4
- [ ] D) 5
- [ ] E) -1.5

---

4 Simplify 2a + 6b + a - 7b.

- [ ] A) 2ab
- [ ] B) 3a - b
- [ ] C) 3a + 13b
- [ ] D) 2a - b
- [ ] E) 3a + 6b

© Revision Library | revisionlibrary.co.uk

5 Solve 5x + 7 = 57.

- [ ] A) 12.8
- [ ] B) 18.4
- [ ] C) 4.4
- [ ] D) 11
- [ ] E) 10

---

6 Simplify 8a + 5b + a - 4b.

- [ ] A) 9a + 5b
- [ ] B) 9a + 9b
- [ ] C) 10ab
- [ ] D) 9a + b
- [ ] E) 8a + b

---

7 Solve 9x - 3 = 42.

- [ ] A) 4
- [ ] B) 5
- [ ] C) 45
- [ ] D) 6
- [ ] E) 405

---

8 Simplify 3a + 5b + 9a - 4b.

- [ ] A) 12a + 9b
- [ ] B) 12a + 5b
- [ ] C) 27a + b
- [ ] D) 13ab
- [ ] E) 12a + b

---

9 Simplify a + 8b + 4a - 4b.

- [ ] A) 5a + 4b
- [ ] B) 5a - 4b
- [ ] C) 9ab
- [ ] D) 5a + 12b
- [ ] E) 5a + 8b

© Revision Library | revisionlibrary.co.uk

10 Solve $2(x + 3) = 4$.

- [ ] A) -1
- [ ] B) -2
- [ ] C) 5
- [ ] D) 2
- [ ] E) 0.5

---

11 Simplify $6a + 2b + 2a - b$.

- [ ] A) 9ab
- [ ] B) 12a + b
- [ ] C) 8a + 3b
- [ ] D) 8a + 2b
- [ ] E) 8a + b

---

12 Solve $2x + 7 = 27$.

- [ ] A) 9
- [ ] B) 10
- [ ] C) 17
- [ ] D) 20.5
- [ ] E) 6.5

---

13 Simplify $4a + 5b + 7a - 7b$.

- [ ] A) 11a + 2b
- [ ] B) 28a - 2b
- [ ] C) 9ab
- [ ] D) 11a - 2b
- [ ] E) 11a + 12b

---

14 Solve $4(x + 1) = 20$.

- [ ] A) 4.75
- [ ] B) 6
- [ ] C) 4
- [ ] D) 16
- [ ] E) 3

© Revision Library | revisionlibrary.co.uk

15 Simplify 6a + 4b + 2a - b.

- ☐ A) 12a + 3b
- ☐ B) 8a + 3b
- ☐ C) 8a - 3b
- ☐ D) 11ab
- ☐ E) 8a + 5b

---

16 Solve 5x + 3 = 78.

- ☐ A) 12.6
- ☐ B) 375
- ☐ C) 16.2
- ☐ D) 15
- ☐ E) 16

---

17 Simplify 3a + 7b + 4a - 3b.

- ☐ A) 7a + 4b
- ☐ B) 11ab
- ☐ C) 12a + 4b
- ☐ D) 7a + 10b
- ☐ E) 7a + 7b

---

18 Solve each equation, showing your working.

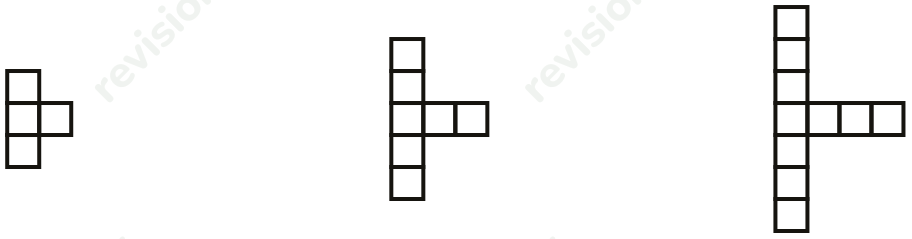
(a) 2x + 3 = 11 **(2)**

(b) 5y - 4 = 16 **(2)**

(c) 3n + 7 = 1 **(2)**

© Revision Library | revisionlibrary.co.uk

19 A pattern is made from squares. Pattern 1 has 4 squares, pattern 2 has 7 squares and pattern 3 has 10 squares. The number of squares increases by 3 for each new pattern.



Pattern 1 Pattern 2 Pattern 3

(a) Calculate the number of squares in pattern 5. **(1)**

.....

(b) Find an expression, in terms of n, for the number of squares in pattern n. **(2)**

.....

(c) A pattern in the sequence has 61 squares. Calculate which pattern number this is. **(2)**

.....

20 The sum of three consecutive integers is 84. Let the smallest of the three integers be n.

(a) Write an expression, in terms of n, for the sum of the three consecutive integers. **(1)**

.....

(b) Form and solve an equation to find the value of n. **(2)**

.....

(c) State the three consecutive integers. **(1)**

© Revision Library | revisionlibrary.co.uk

Mark scheme · 2.14 Early Algebra: 30-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

correct option D (16a + 5b) cao **B1**

Answer: D) 16a + 5b

Question 2

correct option A (7) cao **B1**

Answer: A) 7

Question 3

correct option C (4) cao **B1**

Answer: C) 4

Question 4

correct option B (3a - b) cao **B1**

Answer: B) 3a - b

Question 5

correct option E (10) cao **B1**

Answer: E) 10

Question 6

correct option D (9a + b) cao **B1**

Answer: D) 9a + b

Question 7

correct option B (5) cao **B1**

Answer: B) 5

Question 8

correct option E (12a + b) cao **B1**

Answer: E) 12a + b

Question 9

correct option A (5a + 4b) cao **B1**

Answer: A) 5a + 4b

Question 10

correct option A (-1) cao **B1**

Answer: A) -1

Question 11

correct option E (8a + b) cao **B1**

Answer: E) 8a + b

Question 12

correct option B (10) cao **B1**

Answer: B) 10

Question 13

correct option D (11a - 2b) cao **B1**

Answer: D) 11a - 2b

Question 14

correct option C (4) cao **B1**

Answer: C) 4

Question 15

correct option B (8a + 3b) cao **B1**

Answer: B) 8a + 3b

Question 16

correct option D (15) cao **B1**

Answer: D) 15

Question 17

correct option A (7a + 4b) cao **B1**

Answer: A) 7a + 4b

Question 18

(a) 2x = 8 seen **M1**

(a) x = 4 cao **A1**

(a) Answer: x = 4

(b) 5y = 20 seen **M1**

(b) y = 4 cao **A1**

(b) Answer: y = 4

(c) 3n = -6 seen **M1**

(c) n = -2 cao **A1**

(c) Answer: n = -2

Question 19

(a) 16 cao **B1**

(a) Answer: 16

(b) common difference of 3 used, e.g. 3n seen **M1**

(b) 3n + 1 oe cao **A1**

(b) Answer: 3n + 1

(c) 3n + 1 = 61 seen (ft from their expression) **M1**

(c) n = 20 cao **A1**

(c) Answer: pattern 20

Question 20

(a) n + (n+1) + (n+2) oe, or 3n + 3 oe **B1**

(a) Answer: 3n + 3

(b) 3n + 3 = 84 seen (ft), leading to 3n = 81 **M1**

(b) n = 27 cao **A1**

(b) Answer: n = 27

(c) 27, 28 and 29 all correct (ft) **B1**

(c) Answer: 27, 28, 29

© Revision Library | revisionlibrary.co.uk