FOUNDATION

1.8 Negative Numbers: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Here are the first five terms of a number sequence: 7, 4, 1, -2, -5

(a) Write down the next two terms in the sequence. **(1)**

.....

(b) The rule for the sequence is 'subtract 3 from the previous term'. Work out the 8th term of the sequence. **(2)**

.....

(Total for Question 1 is 3 marks)

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2 Work out the value of each of the following.

(a) -4 x 3 **(1)**

.....

(b) -20 / -5 **(1)**

.....

(c) 6 x (-2) **(1)**

.....

(d) -18 / 3 **(1)**

.....

(Total for Question 2 is 4 marks)

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3 Find the missing number in each calculation.

(a) -4 + ___ = 3 **(1)**

.....

(b) ___ - 6 = -9 **(1)**

.....

(Total for Question 3 is 2 marks)

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4 Work out the value of each of the following.

(a) -6 + 9 **(1)**

.....

(b) -8 - 5 **(1)**

.....

(c) 7 - 12 **(1)**

.....

(d) -10 + (-4) **(1)**

.....

(Total for Question 4 is 4 marks)

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5 A lift in a shopping centre starts at floor 3. It goes down 5 floors, then up 2 floors.

(a) Work out which floor the lift is on now. **(2)**

.....

(b) The car park is on floor -2. Work out how many floors the lift must now travel down to reach the car park. **(2)**

.....

(Total for Question 5 is 4 marks)

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6 Put these numbers in order from largest to smallest: -1, -6, 4, 0.

(Total for Question 6 is 1 mark)

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7 Find the missing number: ___ x (-5) = 30.

(Total for Question 7 is 1 mark)

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8 A freezer is set to a temperature of -18°C. A fault causes the temperature to rise by 2°C every hour.

(a) Work out the temperature in the freezer after 2 hours. **(2)**

.....

(b) Food in the freezer becomes unsafe once the temperature reaches -12°C or higher. Work out after how many whole hours the food becomes unsafe. **(3)**

.....

(Total for Question 8 is 5 marks)

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Mark scheme · 1.8 Negative Numbers: 30-minute Pack

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

Question 1

(a) -8 and -11 oe (both correct) **B1**

(a) Answer: -8, -11

(b) correct method continuing the sequence to the 8th term, e.g. 7, 4, 1, -2, -5, -8, -11, -14 **M1**

(b) -14 cao **A1**

(b) Answer: -14

Question 2

(a) -12 cao **B1**

(a) Answer: -12

(b) 4 cao **B1**

(b) Answer: 4

(c) -12 cao **B1**

(c) Answer: -12

(d) -6 cao **B1**

(d) Answer: -6

Question 3

(a) 7 cao **B1**

(a) Answer: 7

(b) -3 cao **B1**

(b) Answer: -3

Question 4

(a) 3 cao **B1**

(a) Answer: 3

(b) -13 cao **B1**

(b) Answer: -13

(c) -5 cao **B1**

(c) Answer: -5

(d) -14 cao **B1**

(d) Answer: -14

Question 5

(a) 3 - 5 + 2 oe, or correct intermediate value -2 seen **M1**

(a) 0 (ground floor) cao **A1**

(a) Answer: 0 (ground floor)

(b) 0 - (-2) oe, ft from (a) **M1**

(b) 2 (floors) cao ft **A1**

(b) Answer: 2 floors

Question 6

4, 0, -1, -6 cao **B1**

Answer: 4, 0, -1, -6

Question 7

-6 cao **B1**

Answer: -6

Question 8

(a) -18 + 2 x 2 oe **M1**

(a) -14 (°C) cao **A1**

(a) Answer: -14°C

(b) correct equation or systematic trial, e.g. -18 + 2h = -12 oe, or table of values shown **M1**

(b) correct method to solve for h, e.g. 2h = 6 **M1**

(b) 3 (hours) cao **A1**

(b) Answer: 3 hours

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