2.107 Function Machines and Simple Equations: 10-minute Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A function machine does: add 7. If the input is 15, what is the output?

- ☐ A) 8
- ☐ B) 105
- ☐ C) 9
- ☐ D) 22
- ☐ E) 28

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2 A machine takes an input, multiplies it by 4 then subtracts 5 to give the output. If the output is 11, what was the input?

- ☐ A) 2
- ☐ B) 3
- ☐ C) 4
- ☐ D) 5
- ☐ E) 6

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3 A function machine does: subtract 6 then divide by 2. The output is 7. What was the input?

- ☐ A) 14
- ☐ B) 18
- ☐ C) 20
- ☐ D) 26
- ☐ E) 28

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4 Solve the equation $x + 7 = 15$. Give the value of x.

(1)

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5 Solve the equation $3x = 21$. Give the value of x.

(1)

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6 If $f(x) = x - 4$, what is $f(12)$?

- ☐ A) 8
- ☐ B) 28
- ☐ C) 16
- ☐ D) 12
- ☐ E) 4

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7 A function machine takes an input and does this: add 12, then subtract 4. What is the output when the input is 5?

- ☐ A) 1
- ☐ B) -3
- ☐ C) 14
- ☐ D) 17
- ☐ E) 13

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8 Solve $5 - 2x = 1$. Show your working.

(2)

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9 Solve $4x - 3 = 2x + 11$. Show your method.

(2)

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Mark scheme · 2.107 Function Machines and Simple Equations: 10-minute Pack

Question 1

option D (22) cao **B1**

Answer: D) 22

Question 2

option C (4) cao **B1**

Answer: C) 4

Question 3

option C (20) cao **B1**

Answer: C) 20

Question 4

x = 8 cao **B1**

Answer: x = 8

Question 5

x = 7 cao **B1**

Answer: x = 7

Question 6

option A (8) cao **B1**

Answer: A) 8

Question 7

correct option E (13) cao **B1**

Answer: E) 13

Question 8

-2x = -4 or equivalent method seen **M1**

x = 2 cao **A1**

Answer: x = 2

Question 9

Collecting x terms: 4x - 2x = 11 + 3 or 2x = 14 seen; accept an equivalent route to the same value without algebra, such as trial and improvement, provided the working is shown **M1**

x = 7 cao **A1**

Answer: x = 7

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