2.7 Function Machines and Inverse Operations: 10-minute Pack

Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A machine does: square the number, then subtract 1. For each input find the output.

(a) Input 2 **(1)**

.....

(b) Input 5 **(1)**

.....

(c) Input -3 **(1)**

.....

2 Write a one-step machine instruction that is the inverse of: multiply by 7.

.....

.....

.....

(3)

3 Stretch: A two-step inverse puzzle. A machine does: multiply by 5 then add k. If an input of 2 gives output 17, find k. Then state the inverse one-step instruction for this machine.

(a) Find k **(2)**

.....

(b) Give the inverse one-step instruction **(1)**

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Mark scheme · 2.7 Function Machines and Inverse Operations: 10-minute Pack

Question 1

(a) 3 cao	**B1**

(a) Answer: **3**

(b) 24 cao	**B1**

(b) Answer: **24**

(c) 8 cao	**B1**

(c) Answer: **8**

Question 2

recognition that inverse is divide by 7	**M1**
correct phrasing, e.g. divide by 7	**M1**
divide by 7 cao	**A1**

Answer: **divide by 7**

Question 3

(a) substitute 2: 5 x 2 + k = 17 or 10 + k = 17	**M1**
(a) 7 cao	**A1**

(a) Answer: **7**

(b) subtract 7 then divide by 5 oe	**B1**

(b) Answer: **subtract 7 then divide by 5**

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