

# P38- Capture-Recapture

OCR

Edexcel

- 16** There is a large number of cubes in a bag.  
Jason wants to work out an estimate for the number of cubes in the bag.
- He takes at random 10 cubes from the bag.  
He puts a mark on each cube and then puts each cube back in the bag.
- Jason shakes the bag and then takes at random 20 of the cubes.  
There is a mark on 3 of the cubes.
- Work out an estimate for the total number of cubes in the bag.

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(Total for Question 16 is 3 marks)

Created by W Neill

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Method 1

$$N = \frac{Mn}{m}$$

N = Population

M = Fish marked then released

n = Size of recapture sample

m = Marked fish in recaptured sample

$$N = \frac{10(20)}{3}$$

$$N = \frac{200}{3} = 66.6$$

67

(Total for Question 16 is 3 marks)

AQA