# 4.1 concept\_reliablity\_and\_Sampling techniques\_P\_1

**1a.** *[2 marks]*

## Markscheme

\* This question is from an exam for a previous syllabus, and may contain minor differences in marking or structure.

equating sum of probabilities to 1 (*p* + 0.5 − *p* + 0.25 + 0.125 + *p*3 = 1)       ***M1***

*p*3 = 0.125 = 

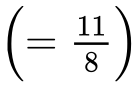
*p*= 0.5      ***A1***

***[2 marks]***

**1b.** *[2 marks]*

## Markscheme

*μ* = 0 × 0.5 + 1 × 0 + 2 × 0.25 + 3 × 0.125 + 4 × 0.125      ***M1***

= 1.375      ***A1***

***[2 marks]***

**1c.** *[2 marks]*

## Markscheme

P(*X* > *μ*) = P(*X* = 2) + P(*X* = 3) + P(*X* = 4)      ***(M1)***

= 0.5       ***A1***

**Note:** Do not award follow through ***A*** marks in (b)(i) from an incorrect value of *p*.

**Note:** Award ***M***marks in both (b)(i) and (b)(ii) provided no negative probabilities, and provided a numerical value for *μ* has been found.

***[2 marks]***

**2.** *[4 marks]*

## Markscheme

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total time of first 3 skiers      ***(M1)A1***

total time of first 4 skiers      ***A1***

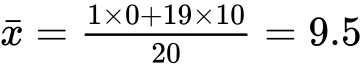
time taken by fourth skier      ***A1***

***[4 marks]***

**3a.** *[2 marks]*

## Markscheme

\* This question is from an exam for a previous syllabus, and may contain minor differences in marking or structure.

     ***(M1)A1***

***[2 marks]***

**3b.** *[1 mark]*

## Markscheme

median is      ***A1***

***[1 mark]***

**3c.** *[2 marks]*

## Markscheme

(i)          ***A1***

(ii)          ***A1***

***[2 marks]***

***Total [5 marks]***

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