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

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

The discrete random variable *X* has the following probability distribution, where *p* is a constant.



Find the value of *p*.

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

Find *μ*, the expected value of *X*.

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

Find P(*X* > *μ*).

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

At a skiing competition the mean time of the first three skiers is 34.1 seconds. The time for the fourth skier is then recorded and the mean time of the first four skiers is 35.0 seconds. Find the time achieved by the fourth skier.

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

A mathematics test is given to a class of 20 students. One student scores 0, but all the other students score 10.

Find the mean score for the class.

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

Write down the median score.

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

Write down the number of students who scored

(i)     above the mean score;

(ii)     below the median score.

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