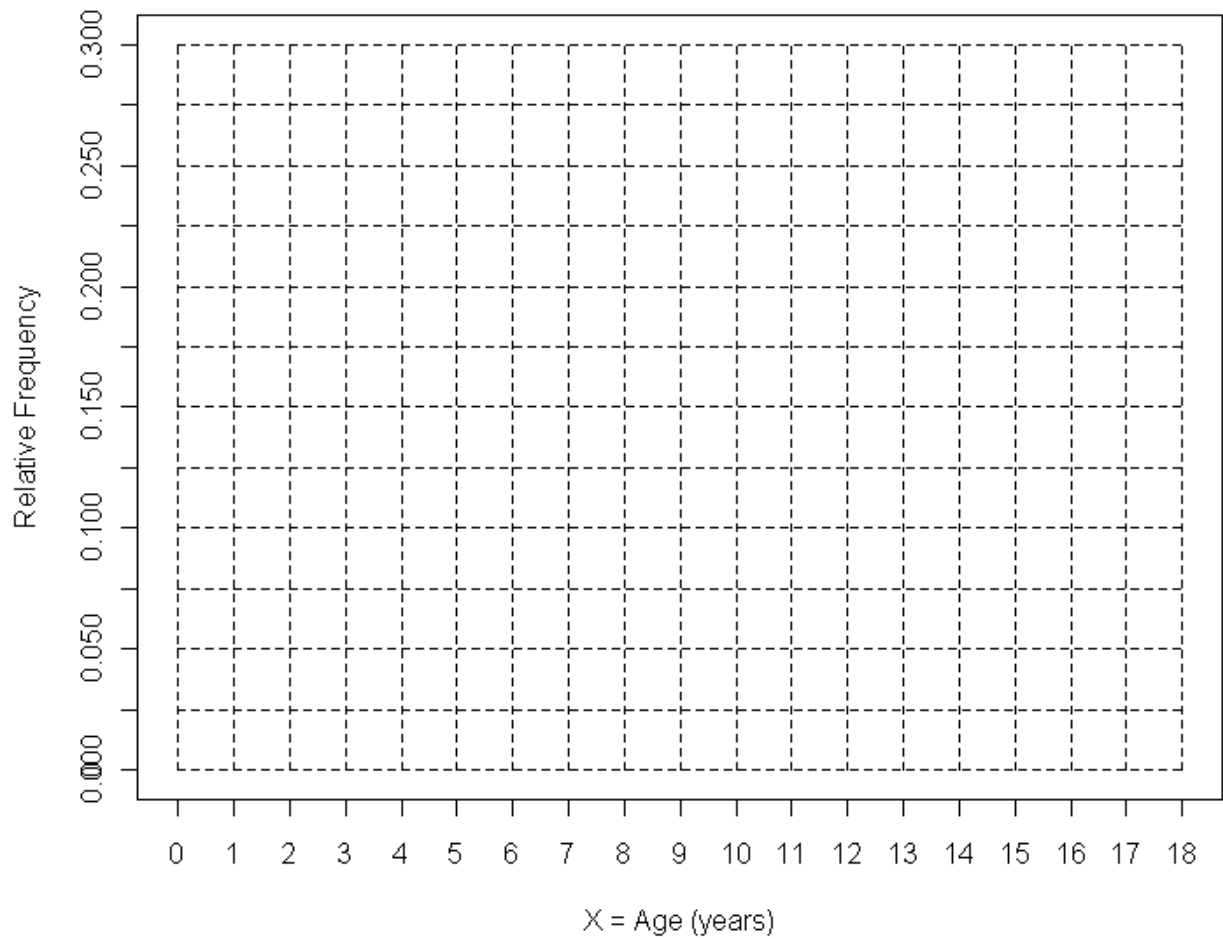**1.** In a certain court case, the ages of $n = 120$ legal minors is grouped into equal quartiles, as indicated by the frequency table below.

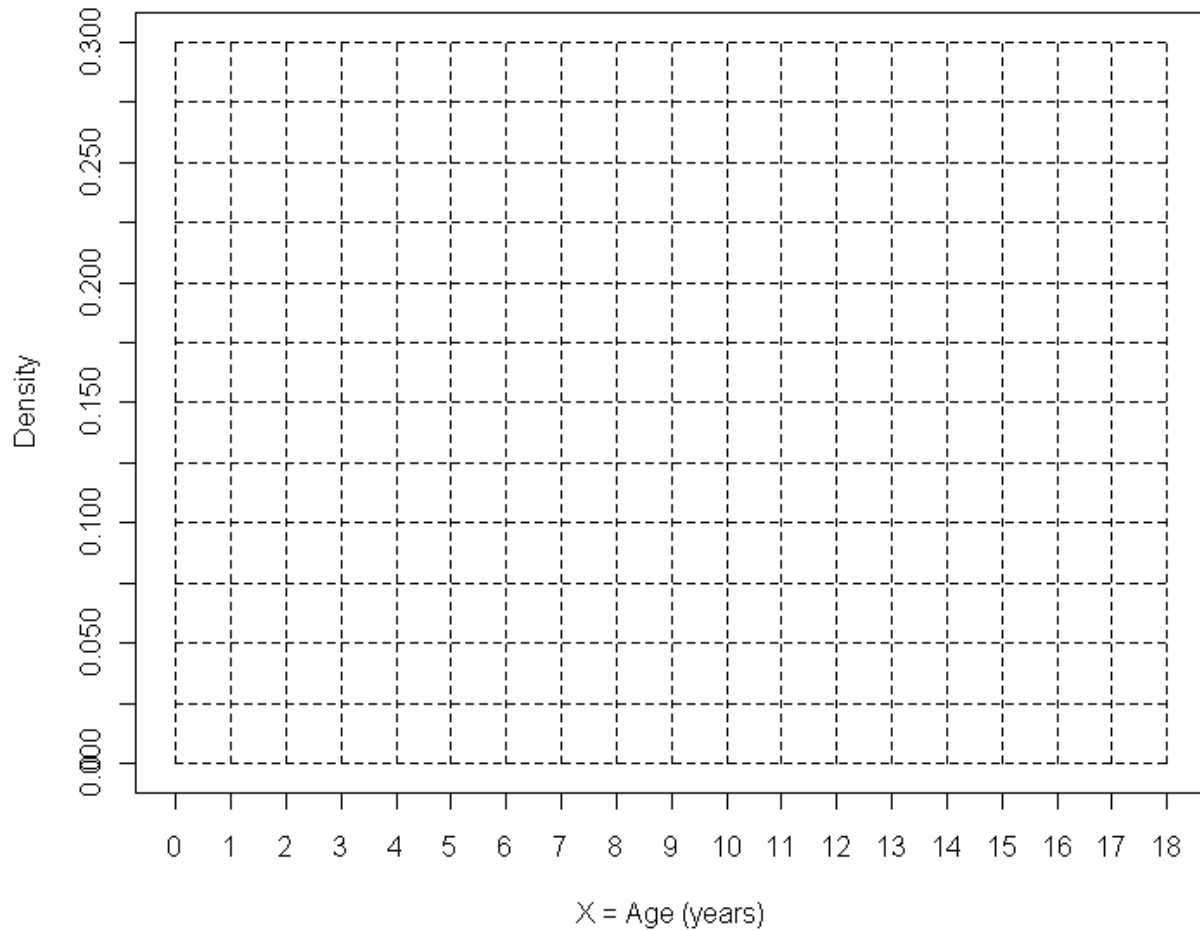| Intervals	Frequencies
[0, 1)	30
[1, 3)	30
[3, 8)	30
[8, 18)	30

(a) Sketch the corresponding **relative frequency histogram** below. *Show all work!* (5 pts)

X = Age (years)

(b) Sketch the corresponding **density histogram** below. ***Show all work!*** (8 pts)

X = Age (years)

(c) Compute the **grouped sample mean** age, and show its approximate **location** on <u>both</u> of these histograms. ***Show all work!*** (3 pts)

(d) Which of these two histograms conveys a more realistic approximation of the true age distribution of this population, *and why*? (3 pts)

(e) Compute the **grouped sample variance** and **grouped sample standard deviation**. (3 pts)

(f) Approximately what **proportion** of the sample lies within one standard deviation of the mean? (3 pts)