2.10 Statistics: Reading and Interpreting Given Diagrams (Venn, Tree, Histogram, Scatter, Box Plot): 10-minute Pack

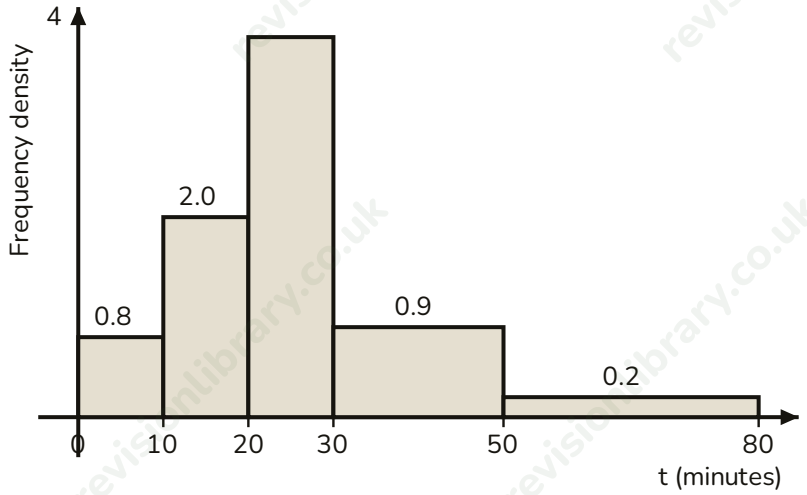
Total Marks

EDEXCEL 8MA0 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The histogram below shows the times, t minutes, taken by 90 runners to complete a fun run. The height of one of the bars is not shown.



(a) State the frequency density represented by the bar for $10 \leq t < 20$. **(1)**

(b) Calculate the number of runners with times in the interval $0 \leq t < 10$. **(2)**

(c) Given that 90 runners took part in total, calculate the frequency density of the bar for $20 \leq t < 30$ minutes; this bar's height is not labelled on the diagram. **(3)**

(d) Estimate the number of runners whose time was between 40 and 50 minutes, stating an assumption you make. **(3)**

(Total for Question 1 is 9 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 2.10 Statistics: Reading and Interpreting Given Diagrams (Venn, Tree, Histogram, Scatter, Box Plot): 10-minute Pack

Question 1

(a) 2.0	**B1**
(a) Answer: 2.0	
(b) correct method: frequency = frequency density x class width, 0.8 x 10	**M1**
(b) cao 8	**A1**
(b) Answer: 8 runners	
(c) attempts the total frequency of the four known bars: 8 + 20 + 18 + 6 = 52	**M1**
(c) correct method: missing frequency = 90 - 52 (= 38), then divides by the class width 10	**M1**
(c) cao 3.8	**A1**
(c) Answer: 3.8	
(d) states an assumption, e.g. that times are uniformly (evenly) distributed within the class $30 \leq t < 50$, oe	**B1**
(d) correct method: 0.9 x 10, or equivalently (50-40)/(50-30) x 18	**M1**
(d) cao 9	**A1**
(d) Answer: 9 runners, assuming times are spread evenly (uniformly) within the class $30 \leq t < 50$.	

© Revision Library | revisionlibrary.co.uk