Grouped data and histograms: frequency and area

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Name: _____ Class: _____ Date: _____

Worked example 1

Group the data $1, 1, 1, 1, 2, 2, 3, 3, 3, 3, 4, 5$ into $0 \le x < 2$, $2 \le x < 4$, $4 \le x \le 6$. Give frequencies and density heights (frequency ÷ class width).

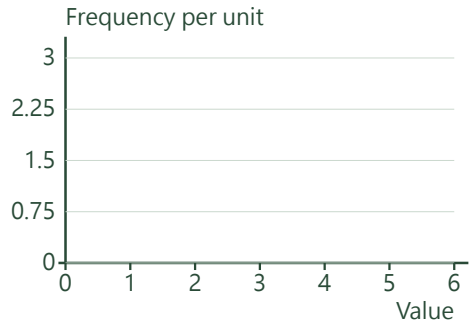
Interval	Frequency	Density
[0,2)	____	____
[2,4)	____	____
[4,6]	____	____

Use the stated conditions and the labelled scales.

Guided attempt 2

Draw a density histogram for $0 \le x < 2$: 4; $2 \le x < 4$: 6; $4 \le x \le 6$: 2. Label frequency per unit on the vertical axis.

1. All class widths equal $2 - 0 = \square$.
2. Complete heights $h_1 = \frac{4}{2} = \square$, $h_2 = \frac{6}{2} = \square$, $h_3 = \frac{2}{2} = \square$.
3. Draw touching bars over the three intervals; label y as frequency per unit and check area total ____.



Use the stated conditions and the labelled scales.

Prerequisite 3

For data 4,7,9,12, find the maximum minus minimum.

Prerequisite 4

A class contains 3 of 12 observations. Find its relative frequency.

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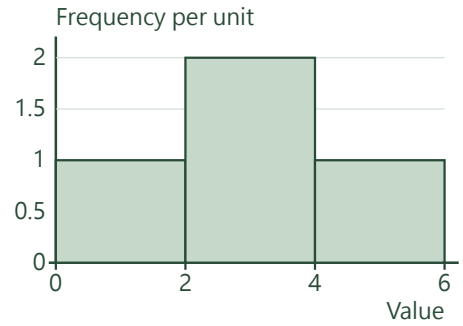
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Independent practice 5

Data are $0, 1, 2, 2, 3, 4, 5, 6$. Use classes $0 \le x < 2$, $2 \le x < 4$, $4 \le x \le 6$. Give all three frequencies.

Independent practice 6

The given density histogram has class width 2 throughout and heights 1,2,1. What fraction of the observations have value at least 2?



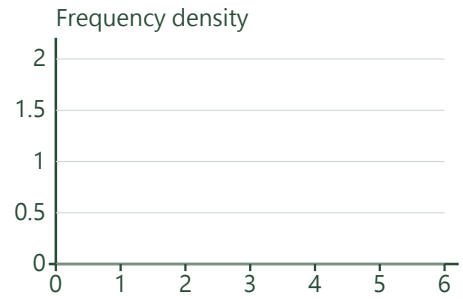
Use the stated conditions and the labelled scales.

Independent practice 7

Class A spans 0 to 10 with frequency 20. Class B spans 10 to 30 with frequency 30. Find density heights for a histogram. Which class has more observations?

Independent practice 8

Draw a density histogram for $0 \le x < 2$: 2, $2 \le x < 4$: 4, $4 \le x \le 6$: 2. Label both axes.



Use the stated conditions and the labelled scales.

Exit question 9

For classes $0 \le x < 2$ and $2 \le x < 4$, where is x=2 counted?

A. Both classes.
B. Neither class.
C. Only the second class.

Exit question 10

A density histogram bar has width 4 and height 3 observations per unit. Find its frequency.