

Histograms

Frequency is represented by area on a histogram

F.D. frequency density is always the vertical axis

Example

Plant Height cm	Frequency
$0 < h \leq 10$	20
$10 < h \leq 30$	30
$30 < h \leq 40$	40
$40 < h \leq 70$	15
$70 < h \leq 80$	10

$$F.D. = \text{Freq} \div \text{width}$$

$$20 \div 10 = 2$$

$$30 \div 20 = 1.5$$

$$40 \div 10 = 4$$

$$15 \div 30 = 0.5$$

$$10 \div 10 = 1$$



What is probability a random plant is more than 35cm tall?

$$\text{Total Plants} = 20 + 30 + 40 + 15 + 10 = 115$$

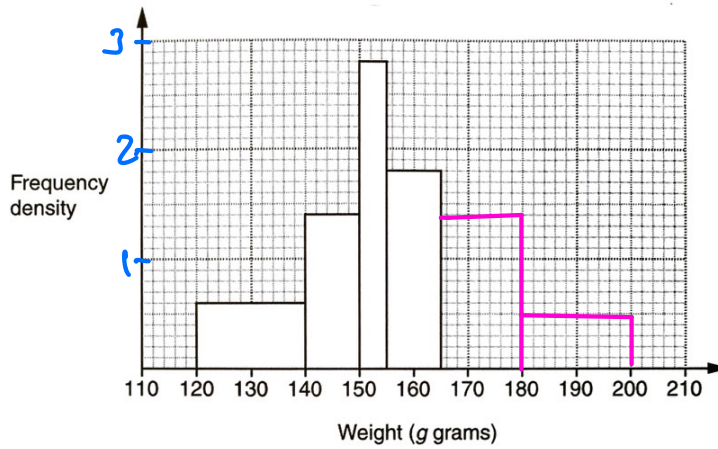
$$\text{Taller than 35cm} = 20 + 15 + 10 = 45$$

$$\text{Prob (Taller than 35cm)} = \frac{45}{115}$$

Exam Question

16

16 William is drawing a histogram to show information about the weights of some pears.



Allows
FD
scale to be
determined

(a) Complete the frequency table.

Weight (g grams)	Frequency
$120 < g \leq 140$	12
$140 < g \leq 150$	14
$150 < g \leq 155$	14
$155 < g \leq 165$	18
$165 < g \leq 180$	21
$180 < g \leq 200$	10

$$FD = \text{Freq} \div \text{Weight Width}$$

$$12 \div 20 = 0.6$$

$$\text{Area} = 5 \times 2.8$$

$$\text{Area} = 10 \times 1.8$$

$$FD = 21 \div 15 = 1.4$$

$$FD = 10 \div 20 = 0.5$$

[2]

(b) Complete the histogram, including a scale.

The info about the bar for 120-140
allowed us to set the FD scale
as we knew it was 0.6 high

[3]