Frequency Polygon

A frequency polygon is a statistical diagram for ***continuous*** data.

The x axis represents the continuous variable and the y axis represents the frequency.

To plot a frequency ploygon you should:

1. Find the midpoint of each class
2. Plot the midpoint again the frequency
3. Join up the points with straight lines

It is sometimes introduced as drawing a histogram with equal class widths, then marking the midpoint of the top of each bar and joing them with a straight line but you must remember to rub out the histogram afterwards

2 or more frequency polygons can be plotted on one graph with a key to distinguish between them. This allows for eacy compasrions between sets of continuous data

When comparing data from two or more frequency polygons we should always try to comment on:

Spread: Identify which polygon has the largest range of data

- *To caluclate the range you work out the difference between where the graph starts and ends*

Average: Identify which polygon has the largest median

- *The **mode** on a frequency polygon is the peak of the graph*

Skew: Identify whether each polygon has a positive or negative skew

- *Positive skew is where the peak is closer to the start of the graph*
- *Negative skew is where the peak is closer to the end of the graph*

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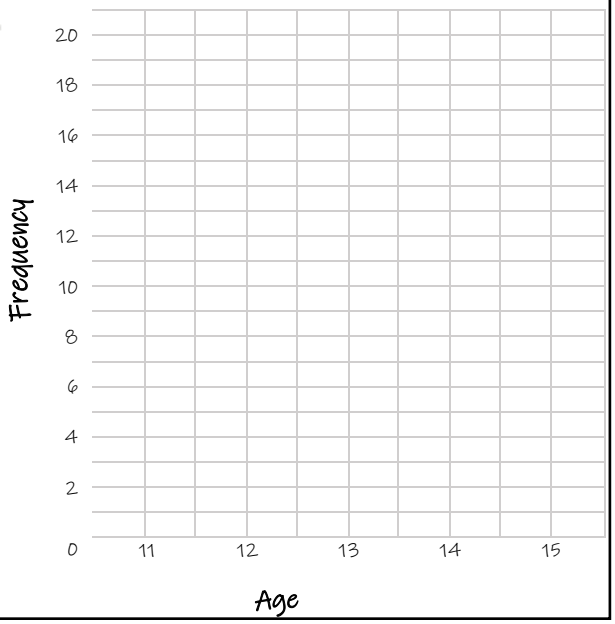
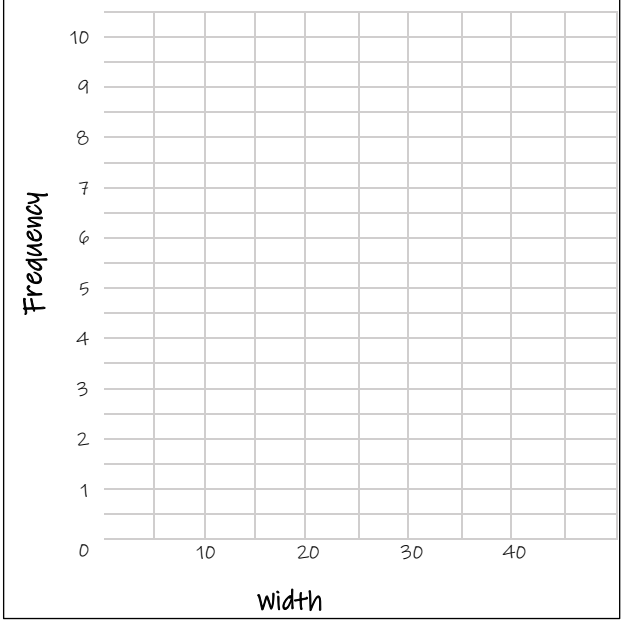
For each of the data sets below, plot a frequency polygon on the grid provided.

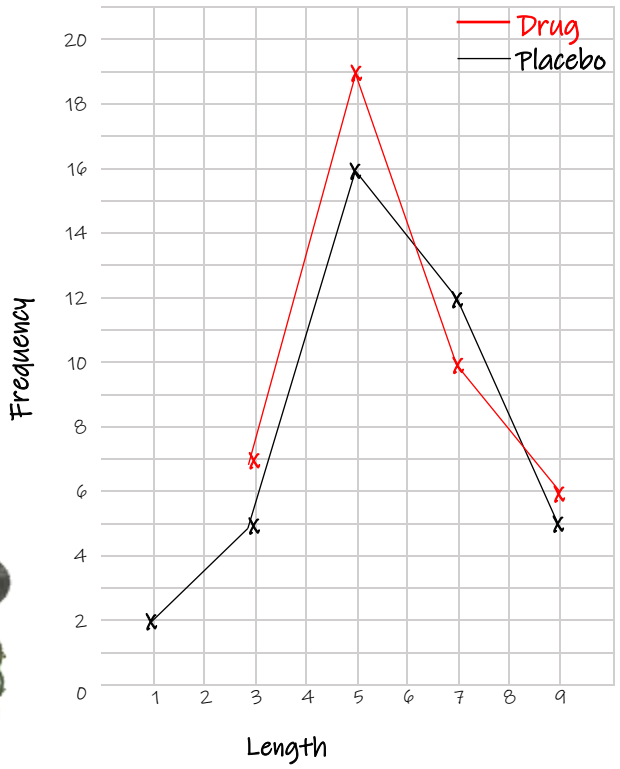
Age	Freq.	MP
$11 \leq a < 12$	17	
$12 \leq a < 13$	15	
$13 \leq a < 14$	16	
$14 \leq a < 15$	20	



Width	Freq.	
$0 \leq w < 10$	5	
$10 \leq w < 20$	2	
$20 \leq w < 30$	9	
$30 \leq w < 40$	7	



For the frequency polygons shown of the graph below, answer the questions



Which group had the largest range of growth?

☐ Drug ☐ Placebo

Which group had the longest growth, on average (the mode)?

☐ Drug ☐ Placebo

What is the shew for the data for the 'drug' group?

☐ Positive ☐ Negative ☐ Symmetrical

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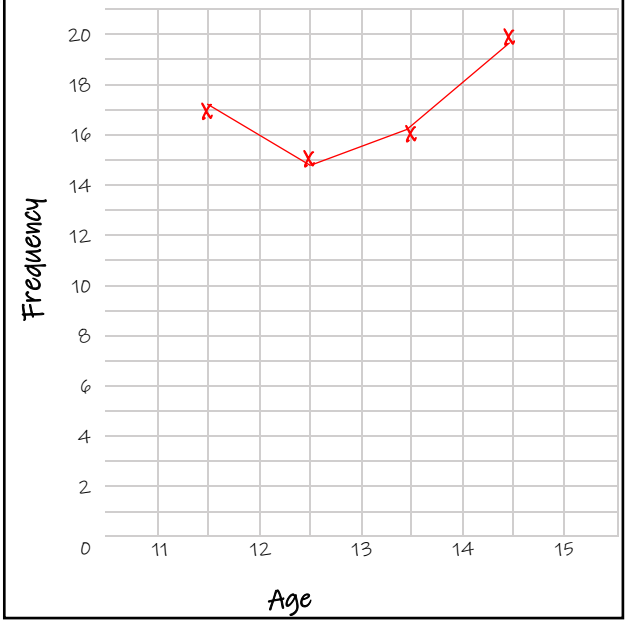
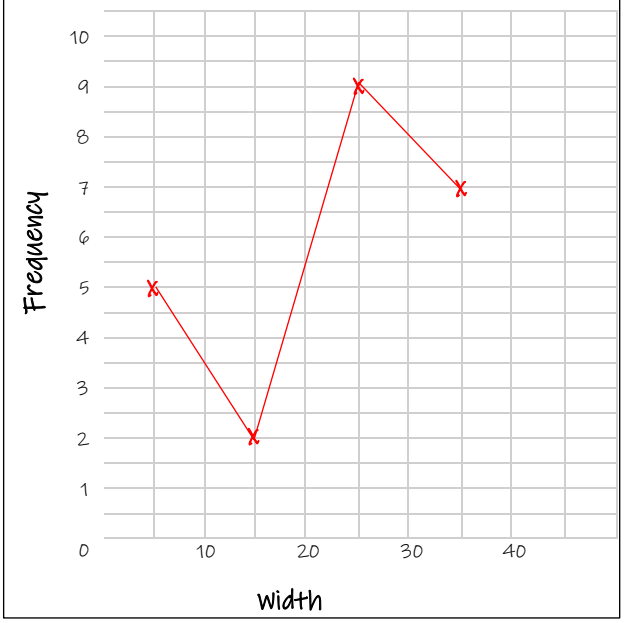
Solutions

Age	Freq.	MP
$11 \le a < 12$	17	11.5
$12 \le a < 13$	15	12.5
$13 \le a < 14$	16	13.5
$14 \le a < 15$	20	14.5



Width	Freq.	
$0 \le w < 10$	5	5
$10 \le w < 20$	2	15
$20 \le w < 30$	9	25
$30 \le w < 40$	7	35



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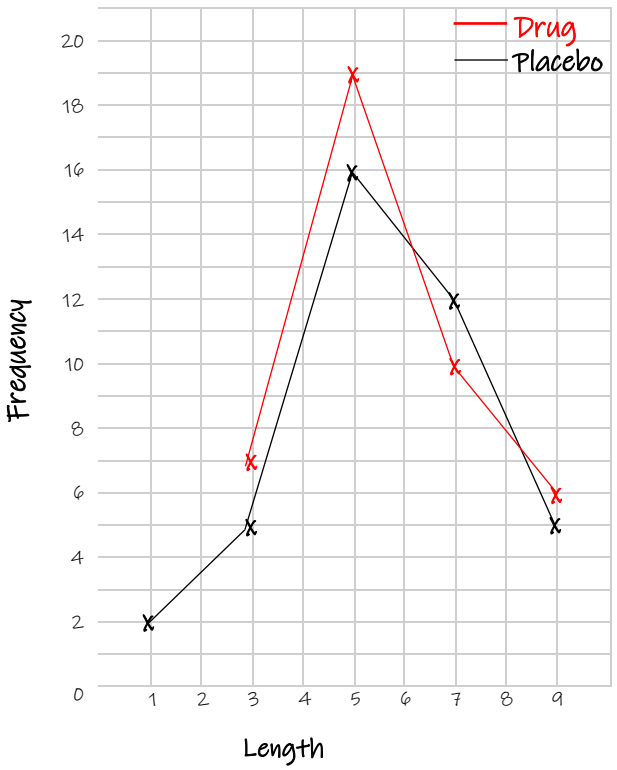

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