

# Pies and Areas: a Comparison

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We proposed two hypotheses:

- Single-color pie charts will result in higher accuracy than single-color area charts.
- Single-color pie charts will result in higher accuracy than highlighted area charts.

To test this participants were asked to report the percentage of a whole area taken up by a section of an area chart and a slice of a pie chart.

(3/6)

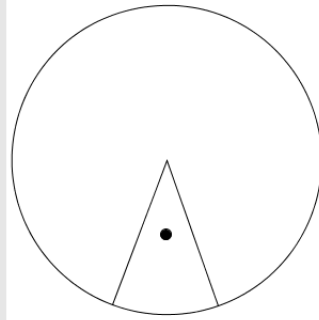


A subsection of the graph is represented between two lines, marked by a black dot.  
What percentage is the subsection of the whole? Please put your answer below.  
e.g. If you think the subsection is 1/4 of the whole graph, please input "25".

ANSWER

Participants first reported on monochromatically colored charts.

(2/6)

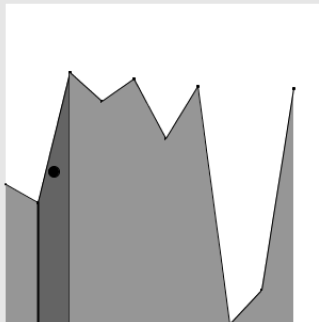


A subsection of the graph is represented between two lines, marked by a black dot.  
What percentage is the subsection of the whole? Please put your answer below.  
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ANSWER

For the second part of the experiment, participants reported on area charts with one section highlighted. During this part, the pie charts remained monochromatically colored.

(1/6)

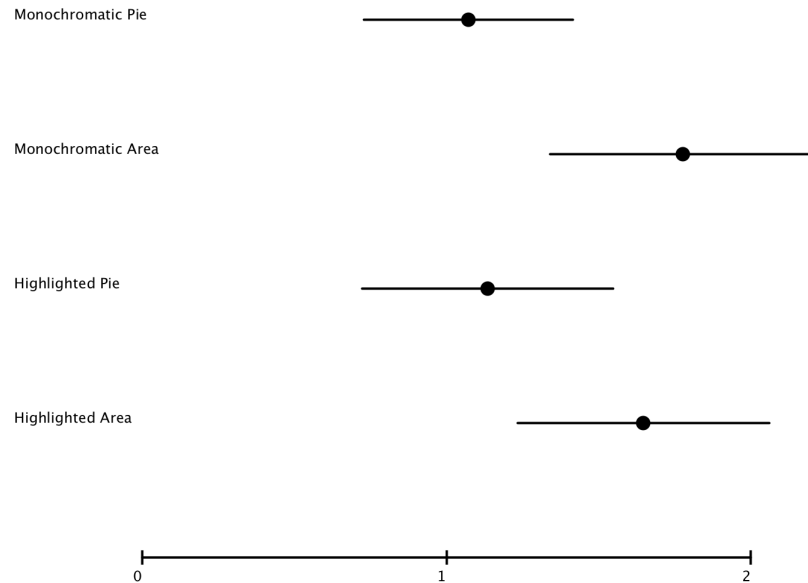


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ANSWER

The experiment was conducted on eleven participants. Each phase of the experiment included three of each kind of graph. A visualization of the mean error and 95 percent confi-

dence intervals for both charts in each phase is shown. Confidence intervals were calculated using the R programming language, reading in .csv files, and using the quantile function for t distribution to calculate the error.



Our hypotheses are supported by this data. Participants were less accurate reporting the percent areas of both monochromatic and highlighted area charts as compared to reporting percent areas of monochromatic pie charts.