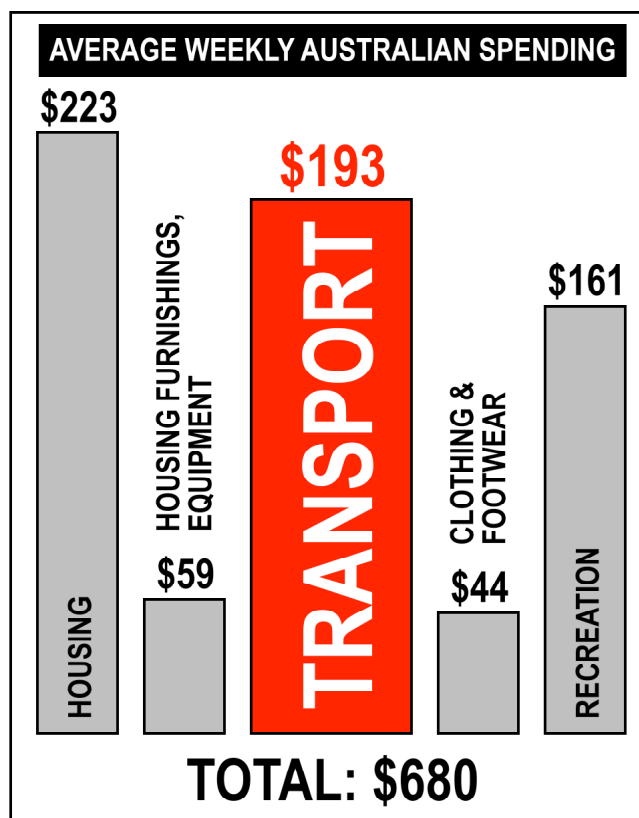


Misleading area graphs: Answers

<http://topdrawer.aamt.edu.au/Statistics/Misunderstandings/Misleading-graphs/Misuse-of-area>



1. What is the title of the graph?

Average Australian weekly spending

2. What is being represented on the horizontal axis?

5 categories of spending

3. What is being represented vertically?

The amount of money spent in each category



4. In a bar graph, the area of a bar is intended to be proportional to the quantity represented in the bar, so how is this graph misleading?

The \$193 bar for 'transport' has twice the area it should, making its proportion of the total look double what it actually is, or \$386

5. What percentage of weekly spending is spent on transport?

$$(\$193/\$680) \times 100 = 28\%$$

6. What percentage of the amount spent on transport would the area shown on the graph appear to represent?

$$\$386/(\$680 + \$193) \times 100 = 44\%$$

7. Why do you think the reporter produced this plot?

Probably there were some stories of increasing transport costs and the reporter wanted to emphasise this expense.

8. (Optional) Explain why we cannot find a median for this data set.

Although reporting numerical values, the data are categorical and it makes no sense.