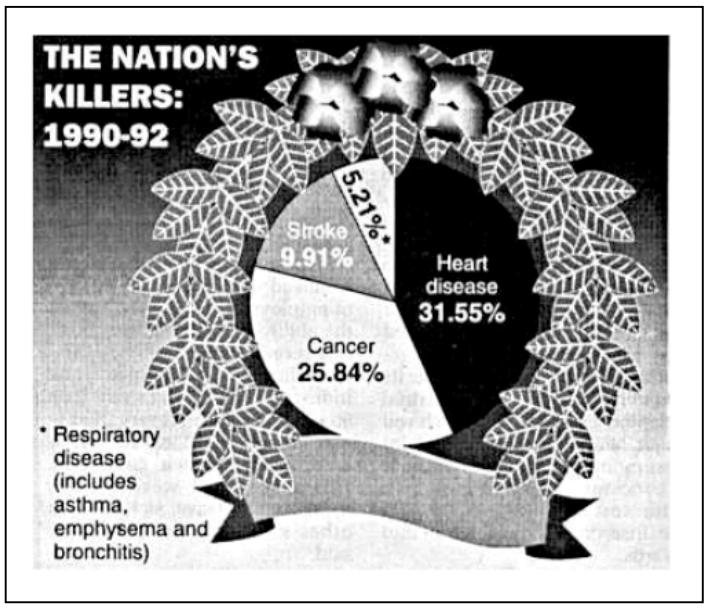
Pie graph activity: Answers

http://topdrawer.aamt.edu.au/Statistics/Assessment/Assessment-tasks/Assessing-the-media



Source: Fairfax Syndication.

1. What is the context for this pie graph?

   The context of the graph is the reported of causes of death for a 3-year period; the causes reported are heart disease, cancer, stroke and respiratory disease. The pie graph is surrounded by a wreath to stress the serious nature of the data.

2. Is there anything unusual about this graph?

   Among the comments students are likely to make are the following:

   It is odd to put a wreath in the graph.

   What is 5.21% for?

   Why are there so many decimal places in the per cents?

   What about multiple sclerosis?

   What about car accidents?

3. Using your understanding of percentages, what can you tell visually by looking at this graph?

   Students who understand percentage should SEE that 25.84% is much larger than one quarter of the pie graph and that 31.55% is larger than one third of the graph.

4. How can you check mathematically whether the definition of a pie graph is satisfied or not? (Show your work.)

   Summing the values in the pie graph gives a percentage much less than 100%: 31.55% + 25.84% + 9.91% + 5.21% = 72.51%

5. How might this error have occurred?

   It would appear most likely that some of the causes of death have been omitted from the pie graph, perhaps because the emphasis was on the most common medical causes. There is no 'other' category for diseases outside of the main four, such as multiple sclerosis or influenza. It is also reasonable to ask about the lack of inclusion of accidental deaths, murder, etc.

   It is also possible that given some of the above possibilities that the percentages from some larger whole were used but the person labelling the graph forgot to recalculate the whole based on 72.51%.