Exercise 1: Answer

The only statistics on the supposed effect of the tax are given at the end of the article, and came from a media release produced by then rival political party New Zealand First (New Zealand First, 2017). The media release quoted a single unnamed vegetable grower as saying a one cent tax per litre on water would lead to a 300 per cent increase in supermarket prices. The media release claimed the tax would lead to the price of a single cabbage skyrocketing from $6 to $18.

The article accepts these statistics uncritically. No attempt is made to question whether such price effects were likely, to find out who the unnamed grower might be, or even to consider that New Zealand First was clearly politically motivated when quoting such figures.

In fact, the figures were soon dismissed by Irrigation New Zealand and others as outlandishly high (see, for instance, Peacock, 2017; Satherley, 2017).

The Labour Party contributed to the unease, given the lack of detail on its tax proposal before the election. However, the *Farmers Weekly* article only contributed to the alarm with its uncritical repeating of a rival political party's unsourced highly dubious figures.

References

New Zealand First. (2017, August 10). *Labour's water tax means $18 cabbages*. Retrieved from www.nzfirst.org.nz/labour_s

Peacock, C. (2017, August 20). *Floating flaky facts on water*. Retrieved from http://www.radionz.co.nz/national/programmes/mediawatch/audio/201855120/floating-flaky-facts-on-water

Satherley, D. (2017, August 18). *Myths about Labour's water tax busted, but questions remain.* Retrieved from http://www.newshub.co.nz/home/election/2017/08/myths-about-labour-s-water-tax-busted-but-questions-remain.html

Scott, A. (2017, August 14). Tax will cripple the rural sector. *Farmers Weekly*, p. 5.

Exercise 2: Answer

The report was largely taken from a Statistics New Zealand media release (Statistics New Zealand, 2013). Although most of the figures were accurate, the final figure was bizarrely wrong. Rather than the New Zealand population increasing by 7000, it had actually increased by 214,101.

It is important to do a reality check on the figures you are using. The TV station should have asked itself, does it seem likely that the population of New Zealand would have increased by a mere 7000 over the previous seven years?

References

Statistics New Zealand. (2013). *2013 census usual resident population counts*. Retrieved from http://www.stats.govt.nz/browse_for_stats/population/census_counts/2013CensusUsuallyResidentPopulationCounts_HOTP2013Census.aspx

TV3. (2013). *3 News*. Retrieved from http://www.tv3.co.nz/6PM-BULLETIN-Tuesday-October-15-2013/tabid/3692/articleID/95756/MCat/3102/Default.aspx

Exercise 3: Answers

1. What is 18 as a percentage of 504?

3.6%

2. What is 367 as a percentage of 4?

9175%

3. What is 15 per cent of 2000?

300

4. What is 18 per cent of 360?

64.8

5. What is 67 per cent of 141?

94.5

6. What is 37 per cent of 1483?

548.7

7.   A farmer has increased the size of a herd of cows by 40, from 200 to 240. What is the percentage increase in the size of the herd?

20 per cent

8.   The number of Japanese people emigrating to NZ each year has risen from 400 to 650. What has been the percentage rise in immigrations from Japan?

62.5 per cent

9.   The number of murders in NZ in 1993 was 32, compared with 26 in 1992. What was the percentage increase in the number of murders from 1992?

23.1 per cent

10.   A student spent 40 hours a week at Uni last year, but this year spends only 25 hours at Uni. What has been the percentage fall in the student's hours?

37.5 per cent fall.

11.   Unemployment in Rotorua has fallen from 9500 in the first half of 2013 to 8500 in the first half of this year. What has been the percentage fall in unemployment?

10.5 per cent fall

12.   The mean size of New Zealand families has fallen from 5.4 people to 3.5 people. Express this decrease as a percentage fall.

35.2 per cent fall

13.   The price of a bag of carrots has increased by 5 per cent from $2 cents. What is the new price of a bag of carrots after the price rise?

$2.10

14.   The number of UN troops in a strife-torn country rises 28 per cent from 5000. How many UN troops are now in the country?

6400 troops

15.   The price of a litre of unleaded petrol rises 2 per cent from $2.10. What is the new price of a litre of unleaded petrol?

$2.14

16.   The amount of water in the Waitakere storage lakes has dropped 5 per cent from 40 billion litres. How much water is now in the lakes?

38 billion litres

17.   Production of cars at a factory has dropped 20 per cent from 600 per day. How many cars are now produced at the factory each day?

480 cars per day

18.   The corn harvest in Iowa has been cut by 6.2 per cent from 30 million bushels per year. How many bushels are now produced per year?

28.1 million bushels

19.   There has been a 20 per cent rise in weekly sales of the book *Accidents in the Home* by Ivor Sorehead, with sales now reaching 3000 copies per week. How many copies were being sold in the week before the rise?

2500 copies

20.   The number of children starting at a school this year is 150. This is a 25 per cent up on last year's figure. How many children started at the school last year?

120 children

21.   The number of volunteers for duty at the shelter has risen 60 per cent in the past year, to 512. How many volunteers were there a year ago?

320 volunteers

22.   The number of violent crimes this year is 3600. That is 10 per cent lower than in the previous year. How many violent crimes were there in the previous year?

4000 crimes

23.   The average salary is now $31,025. That is 14 per cent lower than a year ago. What was the average salary a year ago?

$36,076

24.   A long jumper jumped one metre more than his previous best, an improvement of 20 per cent. What was his previous best?

5 metres

Exercise 4: Answer

Not much. We are not told how the survey was conducted, what the response rate was, what the questions were, what the margin of error was, etc.

The survey was commissioned by an adult sex toy company, and it appears it was more about raising the company's profile than conducting a proper scientific survey. To that extent the survey was successful - many journalists reported the results, drip fed to reporters over several months. See, for instance:

http://www.stuff.co.nz/life-style/love-sex/7096246/Kiwis-rate-themselves-in-the-sack

and

http://www.stuff.co.nz/life-style/love-sex/7483444/Sex-please-we-re-Kiwis