



S13-test Index Numbers: Test Pack

EDEXCEL 1ST0 · Calculator allowed · about 20 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A bakery uses 2018 as the base year to track the price of a pack of bread rolls. In 2018 (the base year), a pack of bread rolls cost £1.40. In 2023, the same pack cost £1.75.

index number = (price in a given year / price in the base year) x 100

- (a) Write down the index number for the base year, 2018. (1)

- (b) Calculate the index number for the price of bread rolls in 2023. (2)

- (c) Write down whether the price of bread rolls has increased or decreased between 2018 and 2023, and explain how you know. (1)

(Total for Question 1 is 4 marks)

- 2** A fixed-base index number always compares a value with a single, fixed base period. A chain-base index number compares each period only with the period immediately before it.

For each statement, write down whether it is True or False.

- (i) A fixed-base index number for 2024 (using 2015 as the base year) compares the 2024 value directly with the 2015 value. (1)
- (ii) A chain-base index number for 2024 compares the 2024 value with the value in 2015, the original base year. (1)
- (iii) For the same data, a chain-base index number for a particular year is usually a different value from the fixed-base index number for that same year. (1)

(Total for Question 2 is 3 marks)

- 3** A farm shop records the price of a box of eggs at the start of each month.

Month	Price of a box of eggs (£)
January	2.00
February	2.20
March	2.42

A fixed-base index number compares each month with a single fixed base month. A chain-base index number compares each month only with the month immediately before it:

chain-base index number = (this month's price / previous month's price) x 100

- (a) Using January as the fixed base month, work out the fixed-base index number for March. (2)

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(b) Work out the chain-base index number for February, compared with January. (2)

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(c) Work out the chain-base index number for March, compared with February. (2)

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(d) State one advantage of using a chain-base index, rather than a fixed-base index, to track the egg price from month to month. (1)

(Total for Question 3 is 7 marks)

4 A garden centre uses a certain year as the base year for the price of a particular garden bench. Using that (original) base year, the index number for the bench's price in 2021 was 108, and the index number for the same bench's price in 2024 was 126.

(a) Work out the index number for the bench's price in 2024, using 2021 (instead of the original base year) as the new base year. Give your answer correct to 1 decimal place. **(3)**

(b) The bench cost £150 in 2021. Work out the price of the bench in 2024. **(2)**

(c) Explain why it was possible to work out the answer to part (b) without knowing the bench's price in the original base year. **(1)**

(Total for Question 4 is 6 marks)

Mark scheme · S13-test Index Numbers: Test Pack

Question 1

- (a) **B1** 100 cao
- (a) **Answer: 100**
- (b) **M1** $1.75 / 1.40$, oe
- (b) **A1** 125 cao
- (b) **Answer: 125**
- (c) **B1** Increased, because the index number (125) is greater than 100, oe
- (c) **Answer: Increased**

Question 2

- (i) **B1** True cao
- (i) **Answer: True**
- (ii) **B1** False cao
- (ii) **Answer: False**
- (iii) **B1** True cao
- (iii) **Answer: True**

Question 3

- (a) **M1** $2.42/2.00$, oe
- (a) **A1** 121 cao
- (a) **Answer: 121**
- (b) **M1** $2.20/2.00$, oe
- (b) **A1** 110 cao
- (b) **Answer: 110**
- (c) **M1** $2.42/2.20$, oe
- (c) **A1** 110 cao
- (c) **Answer: 110**
- (d) **B1** a chain-base index shows the rate of change between consecutive (recent) months, which is more useful for spotting short-term/month-on-month changes than a fixed-base index measured against a month that may be a long time in the past, oe
- (d) **Answer: A chain-base index shows how the price is changing from one month to the next, which is more useful for spotting recent short-term changes than comparing every month back to a single, possibly distant, base month.**

Question 4

- (a) **M1** $126/108$, oe
- (a) **M1** ...x100, dep
- (a) **A1** 116.7 awrt (from 116.666...)
- (a) **Answer: 116.7**
- (b) **M1** $150 \times (126/108)$, oe
- (b) **A1** 175 cao
- (b) **Answer: £175**
- (c) **B1** part (a) found the price relative to 2021 directly by comparing the two given index numbers, both of which are relative to the same (unknown) original base year, so the original base price cancels out and is not needed, oe
- (c) **Answer: Part (a) compared the two given index numbers directly, both measured relative to the same original base year; this original base value cancels out in the ratio, so it never needs to be known.**