

Unit 4 *Inflation Indices*

Text Answers

4.1 Weighted Averages

1. (a) 5 (b) 5 (c) 3.4 (d) 5

2. 8 : 1

3.
$$\frac{ax_1 + (1 - a)x_2}{a + 1 - a} = 1$$

4. (a) 53, 53, 53

(b)
$$\text{Batsman A} = \frac{(10 \times 1) + (56 \times 3) + (93 \times 4)}{1 + 2 + 4(\text{as innings 3 was not out})} = \frac{550}{7} = 78.6$$

$$\text{Batsman B} = \frac{(60 \times 1) + (47 \times 2) + (53 \times 3) + (51 \times 4)}{1 + 2 + 3 + 4(\text{as no not out innings})} = \frac{517}{10} = 51.7$$

$$\text{Batsman C} = \frac{(51 \times 1) + (15 \times 3) + (101 \times 4) + (2 \times 5)}{2 + 3 + 5(\text{as innings 1-4 were not out})} = \frac{510}{10} = 51$$

(c)
$$\text{Batsman A} = \frac{(10 \times 1) + (56 \times 4) + (93 \times 8)}{1 + 2 + 8(\text{as innings 3 was not out})} = \frac{978}{11} = 88.9$$

$$\text{Batsman B} = \frac{(60 \times 1) + (47 \times 2) + (53 \times 4) + (51 \times 8)}{1 + 2 + 4 + 8(\text{as no not out innings})} = \frac{774}{15} = 51.6$$

$$\text{Batsman C} = \frac{(51 \times 1) + (15 \times 4) + (101 \times 8) + (2 \times 16)}{2 + 4 + 16(\text{as innings 1 + 4 were not out})} = \frac{951}{22} = 43.2 \text{ to 1 d.p.}$$

4.2 Index Numbers

1. (a) 133.33 (b) 108.75
2. (a) (i) 173.7 (ii) very similar (b) 175.9
3. (a) (i) 75 (ii) 150 (b) same price

4.3 Retail Price Index

1. (a) It gives a more appropriate average.
 (b) £500
 (c) 117.25

$$= 104$$
2. (a) 120.9 (b) 'All groups' index is less, but is based on many more categories.
 (c) (i) 114.57
 (ii) Reduced, since the 'mortgage' component has index well above 117.79.

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4.3

3. (a) It has decreased; 20p per £1 of expenditure (b) £656.25
 (c) $80 \times 0.40 + 121 \times 0.25 + 125 \times 0.15 + 110 \times 0.15 + 130 \times 0.05 = 104$
4. (a) (i) Her index weights all items equally.
 Her index does not include important items, e.g. housing, transport.
 Using estimated prices in 1986 is not accurate.
 (ii) Wage bargaining, pension and benefit increases, etc.
 It gives a good representative value for the overall increase in prices.
 (b) (i) Costs have risen continually from 1986 to 1989 but the rate of increase is slowing down.
 (ii) $£80\,000 \times \frac{106}{72} \approx £118\,000$
5. (a) $\frac{703}{646} \times 100 \approx 109$ (b) $\frac{295}{306} \times 100 \approx 96$
 (c) Totals : 2003, 2270 Index : $\frac{2270}{2003} \times 100 \approx 113$
6. (a) All the values are 100. (b) It stayed constant. (c) Clothing
 (d) The weight of 0.4 shows that 0.4 (of 40%) of household expenditure is spent on Mortgage.
 (e) (i) £648 (ii) Increase is £48.
 (f) $106 \times 0.2 + 108 \times 0.2 + 97 \times 0.15 + 106 \times 0.4 + 109 \times 0.05 = 105.2$