ERRATA

MATHEMATICAL APPLICATIONS (Second edition)

MATHEMATICS FOR YEAR 12

Second edition - 2007 initial print run

page 35 EXAMPLE 25

House size in photograph is incorrect.

page 82 EXAMPLE 8   last line of the solution should be:

b   Interest $= F_v - P_v$
$= \$18\,544.53 - \$15\,000$
$= \$3544.53$

page 83 EXAMPLE 10   last line of the solution should be:

$n = 28.9$ Thus, 29 half-years are required, i.e., 14.5 years.

page 99 EXAMPLE 22   solution

a   Using a graphics calculator,

```
N=120
I%=8
PV=-5000
PMT=-250
▪FV=56909.81239
P/Y=12
C/Y=52
PMT:END BEGIN
```

Shihoko will have $56 909.81 after 10 years.

page 173 EXAMPLE 21   solution

b   Pauline Products is achieving reasonable gross profits of $214 390 on goods purchased for $120 610 (a 78% markup!). Expenses are reasonable at $141 703, leaving net profit of $73 687. This is quite good, assuming an owner operated business.

page 178 EXAMPLE 22   2nd paragraph should read:

Each hamburger has variable costs of a mince pattie (45 cents), a bread roll (50 cents), **salad (45 cents)**, sauce (5 cents) and wrapping (5 cents). Mac sells each hamburger for $4.50.

page 179 EXAMPLE 22   solution

a   Variable cost per hamburger $= \$0.45 + \$0.50 + \$0.45 + \$0.05 + \$0.05$
$= \$1.50$

page 180 EXAMPLE 23   first paragraph should read:

Again consider Mac deciding to introduce hamburgers to his deli's lunchtime menu. Recall that the fixed costs of hiring equipment to do this are $60 per week. Each hamburger has variable costs of a mince pattie (45 cents), a bread roll (50 cents), **salad (45 cents)**, sauce (5 cents) and wrapping (5 cents).

page 186 EXAMPLE 25   solution, change third line

a   A sole trader is taxed the same as an individual so the tax payable would be:

Tax on $150 000 = $47 100.00

Tax on $10 000 = $4500.00 $\{10\,000 \times 0.45\}$

EXAMPLE 8

d $\begin{bmatrix} 0 & 0.1 & 0.9 \end{bmatrix}$ means that 10% is usable and 90% is very poor this year.

very good usable very poor

EXERCISE 4F.1

3 **a** What is the meaning of the number in:
  i row 1, column 3 **ii** row 3, column 1?

EXERCISE 5H correct spelling

9 **a** Find how many of each type of cake Elsie should make to maximise her profit if the shop makes $5 on a chocolate cheesecake and $6 on a lemon cheesecake.

BLUE BOX at the bottom of the page – correct spelling

If the variable for which you are finding optimal solutions is **continuous** (for example weight, volume, etc.) then a non-integer solution is perfectly acceptable.

In such cases the optimal solution will always be at a vertex or along a boundary of the feasible region.

EXAMPLE 4 solution, last line should read:

Total Proceeds $5531.58

EXAMPLE 5 solution, last line should read:

Total Proceeds $10 196.50

EXERCISE 1B.6

5 **a** 7500 **b** 3050

EXERCISE 4F.2

4 **e** It is not reasonable to base plans on these figures, as if living conditions change on one of the islands, the **transition** matrix might change, and a different steady state will be reached.

5 **e** The transition matrix does not change, the courier constantly has documents to **deliver**, etc.

ANSWERS REVIEW SET 5

7 **b** **i** 4 water meters, 7 gas meters

ANSWERS EXERCISE 6D

4 **d** **ii** The bookmaker also has zero expectation for the bet in this case. If this were the case, he would make no profit. In reality, the probability calculated from the odds is slightly higher than the horse's actual probability of winning, allowing the book-maker to make a profit. The punter can expect to lose money in the long run.

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Second edition - 2008 reprint

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page 235 EXERCISE 4F.1

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3 **a** What is the meaning of the number in:

    i row 1, column 3   **ii** row 3, column 1?

---

page 301 EXERCISE 5H correct spelling

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9 **a** Find how many of each type of cake Elsie should make to maximise her profit if the shop makes \$5 on a chocolate cheesecake and \$6 on a lemon cheesecake.

---

page 301 BLUE BOX at the bottom of the page – correct spelling

---

If the variable for which you are finding optimal solutions is **continuous** (for example weight, volume, etc.) then a non-integer solution is perfectly acceptable.

In such cases the optimal solution will always be at a vertex or along a boundary of the feasible region.

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page 528 EXERCISE 1B.6

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5 a 7500 **b** 3050

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page 553 EXERCISE 4F.2

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4 **e** It is not reasonable to base plans on these figures, as if living conditions change on one of the islands, the **transition** matrix might change, and a different steady state will be reached.

5 **e** The transition matrix does not change, the courier constantly has documents to **deliver**, etc.

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page 565 ANSWERS   REVIEW SET 5

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7 **b** **i** 4 water meters, 7 gas meters

---

page 567 ANSWERS   EXERCISE 6D

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4 **d** **ii** The bookmaker also has zero expectation for the bet in this case. If this were the case, he would make no profit. In reality, the probability calculated from the odds is slightly higher than the horse's actual probability of winning, allowing the book-maker to make a profit. The punter can expect to lose money in the long run.

Second edition - 2012 reprint

page 145 **EXERCISE 3B.2**

3 A small suburban post office has two attendants serving and they take five minutes to serve each customer. The **first customer is** waiting when the post office opens at 8:30 am and then customers arrive at regular intervals of three minutes.

page 529 **ANSWERS   EXERCISE 1B.11**

10 51.0 m^3

page 530 **ANSWERS   EXERCISE 2C.2**

5 15 times

page 530 **ANSWERS   EXERCISE 2C.6**

3 $774.45