



ERRATA

MATHEMATICS FOR THE INTERNATIONAL STUDENT 10E

MYP 5 (Extended)

Worked Solutions

First edition - 2015

The following erratum was made on 02/Sep/2019

page 832 **REVIEW SET 29A** Question 6, diagram should have correct label for (9, 0):

- 6 Let x be the number of gas meters produced.
Let y be the number of water meters produced.

Type	Gears	Dials	Number produced	Profit per meter
Gas	4	1	x	£20
Water	12	1	y	£31

We need to maximise $(20x + 31y)$ pounds.

The constraints are:

$$x \geq 0, \quad y \geq 0, \quad 4 + 12y \leq 60 \quad \therefore \quad x + 3y \leq 15 \quad \{\text{dividing each term by 4}\}$$

$$x + y \leq 9$$

The simplex is shown alongside.

Vertex	$20x + 31y$
(0, 0)	$20(0) + 31(0) = 0$
(0, 5)	$20(0) + 31(5) = 155$
(6, 3)	$20(6) + 31(3) = 213$ ← maximum
(10, 0)	$20(10) + 31(0) = 200$

The maximum profit of £213 is obtained when 6 gas meters and 3 water meters are produced.

