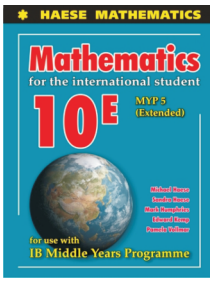


ERRATA

MATHEMATICS FOR THE INTERNATIONAL STUDENT 10E

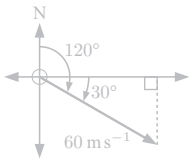
MYP 5 (Extended)

First edition - 2014 initial print

The following errata was made on 28/Jun/2016

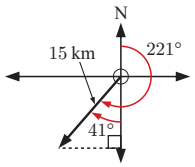
page 590 **ANSWERS EXERCISE 17E.1 5 b,** should have decimal point in the correct place:

5 **a**



The vector is $\begin{pmatrix} 52.0 \\ -30 \end{pmatrix}$.

b



The vector is $\begin{pmatrix} -9.84 \\ -11.3 \end{pmatrix}$.

page 15 **ANSWERS EXERCISE 26E 8 and 10,** should have correct equation:

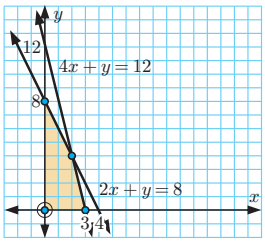
8 $\frac{2}{7} \approx 0.286$

10 $\dfrac{\binom{8}{3} \times \binom{5}{1}}{\binom{13}{4}} \approx 0.392, \quad \dfrac{\binom{8}{2}\binom{5}{2}}{\binom{13}{4}} \approx 0.392$

$\therefore$ both committee types are equally likely.

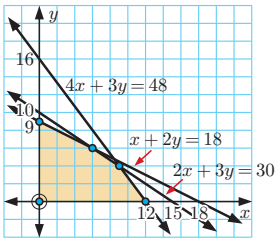
page 23 **ANSWERS EXERCISE 29A 10 b and d,** should include vertices at $(0, 0)$:

10 **b**



Vertices are $(0, 0)$, $(0, 8)$, $(2, 4)$, and $(3, 0)$.

d



Vertices are $(0, 0)$, $(0, 9)$, $(6, 6)$, $(9, 4)$, and $(12, 0)$.

The following erratum was made on 11/Mar/2016

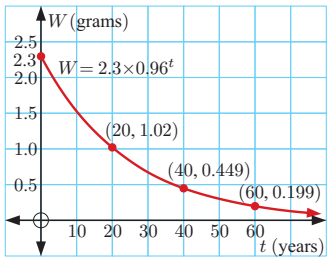
page 594 **ANSWERS EXERCISE 18C.2 2 d,** should be an approximate answer:

2 **a** 2.3 g

b **i** ≈ 1.02 g **ii** ≈ 0.449 g **iii** ≈ 0.199 g

d $\approx 55.8\%$ loss

c



The following erratum was made on 25/Aug/2015

page 574 **ANSWERS REVIEW SET 9A 7 c,** should be changed to match change in question (on page 204):

7 **c** The fastest 25% of the boys swim as fast as or faster than 100% of the girls.

The following errata were made on 11/Aug/2015

page 154 **OPENING PROBLEM** First line should read:

Consider the green triangle on the illustrated plane.

page 288 **EXERCISE 13D 9 b ii,** should read:

9 **b** A student is chosen at random.
Find the probability that the student:

i plays football **ii** plays both sports

page 560 **ANSWERS EXERCISE 3G 1 a** and **3 a,** should factorise like the procedure given:

1 **a** **i** $3x^2 + 7x + 2$
$= 3x^2 + 6x + x + 2$
$= 3x(x + 2) + 1(x + 2)$
$= (x + 2)(3x + 1)$

ii $3x^2 + 7x + 2$
$= 3x^2 + x + 6x + 2$
$= x(3x + 1) + 2(3x + 1)$
$= (3x + 1)(x + 2)$

3 **a** **i** $(2x + 3)(2x - 1)$ **ii** $(2x - 1)(2x + 3)$ **b** yes

page 562 **ANSWERS EXERCISE 4E 7,** should read:

6 $3 + 2\sqrt{2}$ **7** $\sqrt{6} = \dfrac{\sqrt{2} - \sqrt{3}}{p}$ $\left(or \quad \sqrt{6} = \dfrac{12}{5 - 6p^2} \right)$

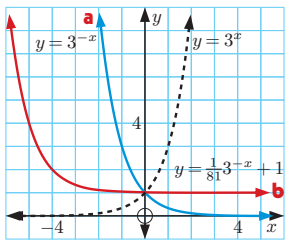
page 568 **ANSWERS EXERCISE 8A.1 5 a,** should read:

5 **a** P$(-3, 1)$, Q$(-1, 1)$, R$(-1, -2)$, S$(-3, -2)$

page 568 **ANSWERS EXERCISE 8B 8 c,** should have functions labelled with correct questions:

8 **a** $y = 3^{-x}$
b $y = \frac{1}{81}3^{-x} + 1$

c



page 579 **ANSWERS EXERCISE 12H 2,** should be approximate values:

2 **a** $\theta \approx 36.3°$ **b** $\theta \approx 53.2°$ **c** $\theta \approx 115.6°$

page 582 **ANSWERS EXERCISE 13G 5,** should read:

4 $P(Y) = 0.4$ **5** $P(C) + P(D) > 1$ **6** **a** 0 **b** 0.1

page 584 **ANSWERS EXERCISE 14D 10,** should have p instead of b:

10 **b** $p = \dfrac{3g}{g-1}$ **c** $0g$ $0p$, $2g$ $6p$, $4g$ $4p$

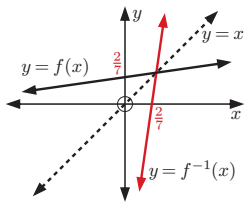
page 585 **ANSWERS EXERCISE 15C.2 1** and **2,** should read "and" instead of "or":

1 **a** $\{x \mid x \in \mathbb{R}\}$ **b** $\{x \mid x \neq 0\}$
c $\{x \mid x \neq 3\}$ **d** $\{x \mid x \neq -2 \text{ and } x \neq 1\}$
e $\{x \mid x \neq 3 \text{ and } x \neq -3\}$ **f** $\{x \mid x \neq 1 \text{ and } x \neq 4\}$

2 **a** $\{x \mid x \geqslant 2\}$ **b** $\{x \mid x \leqslant 3\}$
c $\{x \mid 0 \leqslant x \leqslant 2\}$ **d** $\{x \mid x > 0\}$
e $\{x \mid x > 0\}$ **f** $\{x \mid x < 4 \text{ and } x \neq 0\}$

page 587 **ANSWERS REVIEW SET 15A 9 c,** should label axes intercepts:

9 **a** $f^{-1}(x) = 7x - 2$ **c**



page 587 **ANSWERS REVIEW SET 15B 4 b,** should read "and" instead of "or":

4 **b** Domain is $\{x \mid x \neq -5 \text{ and } x \neq 1\}$.

page 589 **ANSWERS REVIEW SET 16B 10 c,** should read:

10 **c** yes, using $u_n = 2n + 38$ and $S_n = n^2 + 39n$

page 591 **ANSWERS EXERCISE 17H 3** and **5,** should note where answers are approximate:

3 **a** **i** 5 **ii** 45° **b** **i** 10 **ii** 0°
c **i** 0 **ii** 90° **d** **i** 5 **ii** $\approx 70.3°$
e **i** 33 **ii** $\approx 59.5°$ **f** **i** -11 **ii** $\approx 138°$

5 **a** $\approx 37.9°$ **b** $\approx 121°$ **c** $\approx 14.5°$ **d** $\approx 4.40°$

page 592 **ANSWERS REVIEW SET 17A 11,** should note where answer is approximate:

10 **a** -1 **b** 97.1° **11** $\approx 55.6°$

page 592 **ANSWERS REVIEW SET 17B 3 b**, **10**, and **12 c,** should note where answers are approximate to 3 sig. fig.:

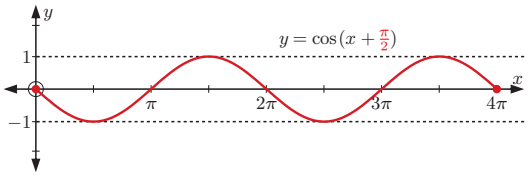
3 **a** He must fly in the direction 11.3° south of east.
b $\approx 204 \text{ km h}^{-1}$

8 **a** $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$ **b** 5 units **9** $k = 2$ **10** $\approx 26.6°$

12 **a** $\begin{pmatrix} -20 \\ 5 \\ -5 \end{pmatrix}$ **b** $\begin{pmatrix} 8 \\ -15 \\ 7 \end{pmatrix}$ **c** $\approx 123°$

page 604 **ANSWERS EXERCISE 21E.2 5 e,** should have correct function equation:

5 **e**

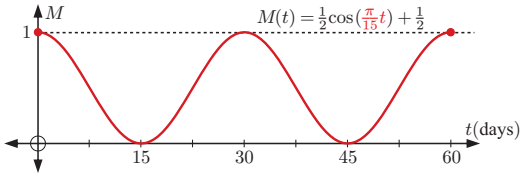


page 605 **ANSWERS EXERCISE 21E.2 8 a ii,** should use correct variable name:

8 **a** **i** 6 **ii** $T = 26$ **iii** 24

page 606 **ANSWERS REVIEW SET 21A 7 a,** should have correct function equation:

7 **a**



page 613 **ANSWERS EXERCISE 25E 4 a** and **5 b,** should read:

4 **a** $V(x) = x(30 - 2x)(20 - 2x)$
$= 4x^3 - 100x^2 + 600x$ mL

b Squares with sides about 3.92 cm.

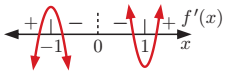
5 **a** P is $(a, 9 - a^2)$ **b** $0 < a < 3$ **c** $A = 18a - 2a^3$

d $12\sqrt{3}$ units^2 when $a = \sqrt{3}$

page 614 **ANSWERS REVIEW SET 25B 7 b,** should show function directions on sign diagram:

7 **a** $f'(x) = 2 - \dfrac{2}{x^2}$

b



The following errata were made on or before 12/Jan/2015

pages 22, 23, and 553 **EXERCISE 1C** Questions **5** to **9,** were re-ordered:

Questions 6 to 9 are all reduced in number by 1
Old question 5 becomes question 9

9 Answer the **Opening Problem** on page **14**.

page 341 **REVIEW SET 15B** Question **6,** should read:

6 If $f(x) = 2x + 1$ and $g(x) = 7 - x$, find in simplest form:

page 580 **ANSWERS EXERCISE 12H** Question **8 b,** should read:

7 **a** 45° **b** 60° **8** **a** 78.1 km **b** $\approx$ 051.2°

The following errata were made on or before 10/Dec/2014

page 29 **SECTION 2A** Explanation of the set of rational numbers, should read:

- $\mathbb{Q}$ is the set of all **rational numbers**, or numbers which can be written in the form $\dfrac{p}{q}$ where p and q are integers, $q \neq 0$.

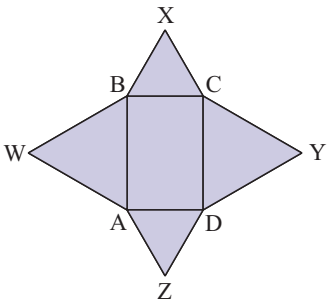
  For example: $\frac{15}{4}$, $10\ (= \frac{10}{1})$, $0.5\ (= \frac{1}{2})$, and $-\frac{3}{8}$ are all rational numbers.
  We cannot represent the rational numbers on a number line, because there are infinitely many of them, and in between them are **irrational numbers** which cannot be written in rational form.
  For example:
  - Radicals or surds such as $\sqrt{2}$ and $\sqrt{7}$ are irrational.
  - $\pi \approx 3.141\,592\,65$ is an irrational number.
  - Decimal numbers which neither terminate nor recur are irrational.

page 31 **EXERCISE 2B** Question **2 d,** should have correct number of dots between 0 and 5:

2 Write using interval notation: **d**

page 137 **EXERCISE 7B** Question **9**, should try to show that WXYZ is a rhombus:

9 ABCD is a rectangle. Equilateral triangles are drawn from each side of the rectangle, with apexes W, X, Y, and Z.
Show that WXYZ is a rhombus.



page 204 **REVIEW SET 9A** Question **7 c**, should not be a strict inequality:

7 **c** The fastest 25% of the boys swim as fast as or faster than ..... % of the girls.

page 385 **REVIEW SET 17A** Question **1 a**, should read:

1 Using a scale of 1 cm represents 10 units, sketch a vector to represent:

a an aeroplane taking off at an angle of $8°$ to the runway with a speed of $60\ \text{m s}^{-1}$

page 554 **ANSWERS EXERCISE 2B 3 d**, should have correct number of dots between 0 and -5:

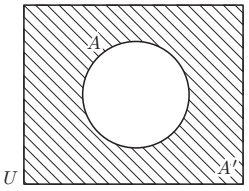
3 **d**

page 556 **ANSWERS EXERCISE 2F 2 b i**, should read:

2 **b** **i** $n(A) + n(B) - n(A \cap B) = a + b + b + c - b$
$= a + b + c$
$= n(A \cup B)$

page 557 **ANSWERS EXERCISE 2H 1 d** should have A unshaded and **2 f** should reference the correct laws:

1 **d**



represents A
represents A'
A' is the region outside A and is shaded.
$(A')'$ is the region not in A' and is unshaded.
$\therefore\ (A')' = A$

2 **f** $(A \cup B) \cap (C \cup D)$
$= ((A \cup B) \cap C) \cup ((A \cup B) \cap D)$ {distributive law}
$= (A \cap C) \cup (B \cap C) \cup (A \cap D) \cup (B \cap D)$ {distributive law}
$= (A \cap C) \cup (A \cap D) \cup (B \cap C) \cup (B \cap D)$ {commutative law}

page 558 **ANSWERS REVIEW SET 2A 14**, should read:

13 **a** 11 **b** 14 **c** 21 **d** 2 **14** 200 families

page 565 **ANSWERS EXERCISE 6E.2 8 b**, should read:

8 **a** **i** $x - 7y = -12$ **ii** $x + y = 8$
b $(\frac{11}{2}) - 7(\frac{5}{2}) = -\frac{24}{2} = -12$ ✓ $(\frac{11}{2}) + (\frac{5}{2}) = 8$ ✓

page 583 **ANSWERS EXERCISE 14B 4 b**, should be an approximate answer:

4 **a** $\approx 4260\ \text{cm}^3$ **b** ≈ 1.06 cm **c** ≈ 4.99 mm

page 584 **ANSWERS EXERCISE 14E 6 b**, should read:

6 **b** $S_{100} = \dfrac{100 \times 101 \times 201}{6} = 338\,350$

page 588 **ANSWERS EXERCISE 16A 6 a**, should read:

6 **a** $u_6 = 14$ **b** 136 **c** $u_8 = -14$

page 588 **ANSWERS EXERCISE 16B 3 d,** should read:

3 **a** $u_1 = 41,\ d = 1$ **b** $u_1 = 1,\ d = 11$
c $u_1 = 98,\ d = -10$ **d** $u_1 = 91,\ d = -9$

page 588 **ANSWERS EXERCISE 16C 9 c,** should include both answers:

9 **c** $u_n = 2 \times 5^{n-1}$ or $u_n = (-2) \times (-5)^{n-1}$

page 588 **ANSWERS EXERCISE 16F.1 2 h,** should be positive:

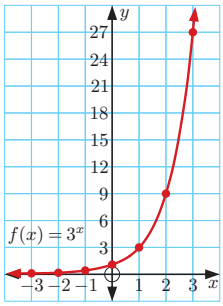
2 **e** -1364 **f** $\frac{1640}{27}$ **g** ≈ 52.2 **h** ≈ 12.8

page 590 **ANSWERS EXERCISE 17D 5 d,** should read:

5 **d** Ian should face $\approx 41.8°$ left of where he is aiming.

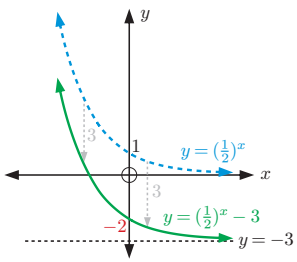
page 592 **ANSWERS EXERCISE 18B.1 1 a,** should have y intercept of 1:

1 **a**



page 592 **ANSWERS EXERCISE 18B.1 1 c i,** should have y intercept of -2:

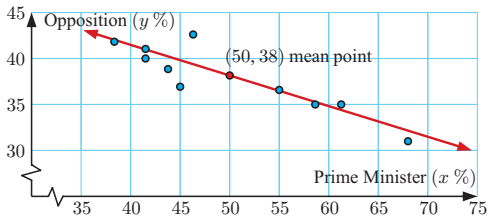
1 **c** **i**



ii $y = -3$
iii $\{y \mid y > -3\}$
iv -2

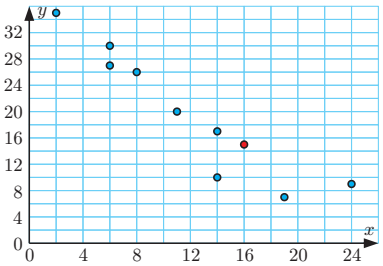
page 609 **ANSWERS EXERCISE 23D.1 3 b,** should have the Prime Minister's approval rating on the x axis:

3 **b**

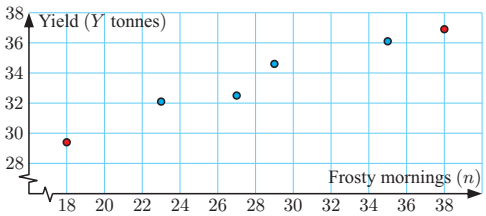


page 610 **ANSWERS EXERCISE 23D.2 1 b i** and **4 a,** should have better placed data points:

1 **b** **i**

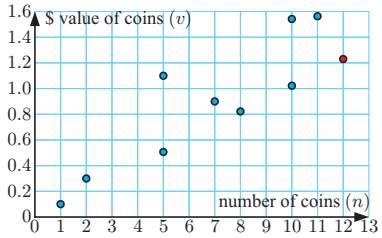


4 **a**

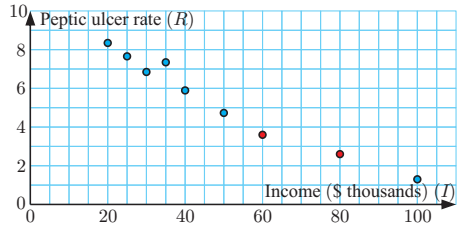


page 611 **ANSWERS REVIEW SET 23B 5 a and 6 a,** should have better placed data points:

5 **a**

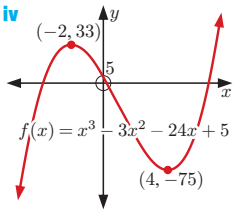


6 **a**



page 613 **ANSWERS EXERCISE 25E 1 d iv,** should have correct function equation:

1 **d** **iv**



page 613 **ANSWERS EXERCISE 25E 5 d,** should read:

5 **a** P is $(a, 9 - a^2)$ **b** $0 \leqslant a \leqslant 3$ **c** $A = 18a - 2a^3$

d $12\sqrt{3}$ units^2 when $a = \sqrt{3}$

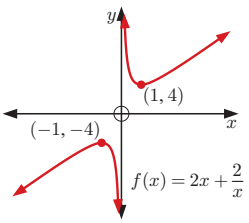
page 614 **ANSWERS EXERCISE 25G.1 2 d,** should state the area:

2 **d** as $n \to \infty$, $\frac{1}{n} \to 0$ $\therefore$ $\left(1 + \frac{1}{n}\right)^2 \to 1$

$\therefore \lim_{n \to \infty} S = \frac{a^4}{4}$ So, the area is $\frac{a^4}{4}$ units^2.

page 614 **ANSWERS REVIEW SET 25B 7 d,** should have correct function equation:

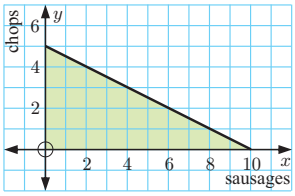
7 **d**



page 22 **ANSWERS EXERCISE 29A.1 1 e and f,** should have correct equation:

1 **e** $x + 2y = 10$

f



$x \geqslant 0$, $y \geqslant 0$, $x + 2y \leqslant 10$

page 25 **ANSWERS REVIEW SET A 6,** should read:

6 6 gas meters, 3 water meters