

ERRATA

MATHEMATICS FOR THE INTERNATIONAL STUDENT 9

MYP 4

First edition - 2010 reprint

page 3 FOREWORD

The printable chapter “Logic” is Chapter 28.

page 76 EXERCISE 3C

1 \bullet $-(7 - x)$

page 99 End of EXERCISE 4D.2



HOW A CALCULATOR CALCULATES RADICAL NUMBERS

Areas of interaction:
Human ingenuity

page 102 HIGHLIGHTED TEXT under heading ‘SUBSETS’ text should be:

Suppose P and Q are two sets. P is a **subset** of Q if every element of P is also an element of Q .

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page 107 EXAMPLE 4 solution:

- a** **i** $A' = \{-3, -1, 1\}$ {all elements of U not in A }
ii $B' = \{-1, 0, 2\}$ {all elements of U not in B }

page 155 INVESTIGATION 2

Final line: $1000 \div 31.623 = 31.623$ m

page 298 EXERCISE 13C.2

- 2** **e** Make h the subject of the formula $A = 2\pi rh + \pi r^2$. Use this rearrangement to check your answer to **d**.

page 399 EXERCISE 19F

- 3** What are the limitations of the method used in **Examples 12** and **13** for graphing the general functions $y = x^2 + bx + c$ or $y = -x^2 + bx + c$?

page 524 ANSWERS EXERCISE 1C.2

- 3** **a** True for all $x \in \mathbb{R}$ as both sides are $6x - 1$.

page 525 ANSWERS EXERCISE 2D

3 **d** 2×10^{-5} m

page 526 ANSWERS EXERCISE 3C

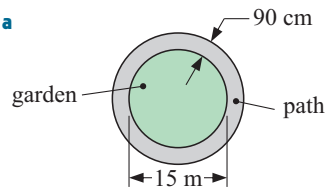
1 \bullet $x - 7$

page 526 ANSWERS EXERCISE 3D

1 **a** $A_1 = ac$

5 a 18.1 kL

8 a

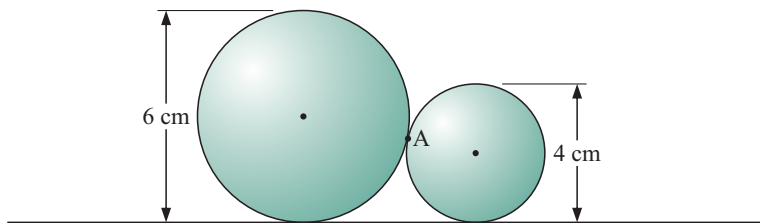


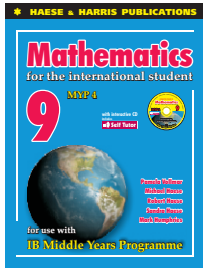
1 g ≈ 14.8 kg

8 c (delete – no solution)

CD CHALLENGE SET 8 question 8 should have correct diagram:

8 Two spheres of diameter 6 cm and 4 cm touch each other at A as they rest on a horizontal table. How high is A above the table?





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Holly bought XBC shares for \$2.50 each and NGL shares for \$4.00 each.

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page 107 **EXERCISE 5D**

2 Find D' , the complement of D , given that:

a $U = \{\text{integers}\}$ and $D = \{0\} \cup \mathbb{Z}^+$

page 108 **TEXT** line under the first diagram should read:

Suppose $U = \{1, 3, 4, 6, 9\}$, $A = \{1, 6, 9\}$ and $A' = \{3, 4\}$.

page 108 **TEXT** text under “SUBSETS” should read:

If $B \subseteq A$ then every element of B is also in A .

The circle representing B is placed within the circle representing A .

page 133 **EXERCISE 6G.1** question should read:

1 State the gradient and y -intercept for these lines:

page 155 **INVESTIGATION 2**

Final line: $1000 \div 31.623 = 31.623 \text{ m}$

The theorem is: There exist no positive integers, x , y and z which satisfy the equation $x^n + y^n = z^n$ for integers $n \geq 3$.

- 2 e** Add further columns to the table alongside to help find the approximate mean.

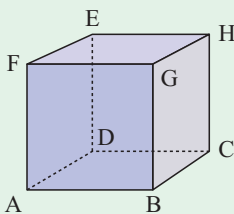
- 1 a** Construct a cumulative frequency table for trout lengths, x cm, using the intervals $21 \leq x < 24$, $24 \leq x < 27$, and so on.

- 3** An electrical appliance store advertises a digital television for £1800. They offer a discount of 5% if the item is paid for in cash up front, or terms of 20% deposit plus fortnightly repayments of £64 for one year. How much more would you pay if you bought the television on terms rather than paying cash?

Table of Monthly Repayments per 1000 units of currency							
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24	46.1449	46.3760	46.6078	46.8403	47.0735	47.3073	47.5418
30	37.8114	38.0443	38.2781	38.5127	38.7481	38.9844	39.2215
36	32.2672	32.5024	32.7387	32.9760	33.2143	33.4536	33.6940
42	28.3168	28.5547	28.7939	29.0342	29.2756	29.5183	29.7621
48	25.3626	25.6034	25.8455	26.0890	26.3338	26.5800	26.8275
54	23.0724	23.3162	23.5615	23.8083	24.0566	24.3064	24.5577
60	21.2470	21.4939	21.7424	21.9926	22.2444	22.4979	22.7531

row 1:	12	87.9159	88.1486	88.3817
row 8:	54	23.0724	23.3162	23.5615

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The illustrated figure is a cube with sides 6 m. Find:

- a** the lengths of [BD] and [DG]
- b** the angle [DG] makes with plane ABCD.

- 2 e** Make h the subject of the formula $A = 2\pi rh + \pi r^2$. Use this rearrangement to check your answer to **d**.

- 4** The batting averages for the English and West Indian teams for a test series were as follows:

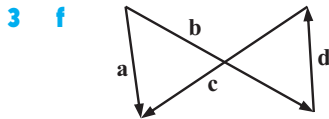
- 6 f** Compare the measures of centre of each distribution.

scale factor $\frac{1}{2}$

Tomas has a garden hose with a nozzle that allows water to shoot out in a continuous fine line.

- 3** What are the limitations of the method used in **Examples 12** and **13** for graphing the general functions $y = x^2 + bx + c$ or $y = -x^2 + bx + c$?

The **distance** travelled by the ship is $|\vec{AB}| = \sqrt{2^2 + 3^2}$
 $= \sqrt{13}$ km.



- 2 b** Find Aleksandra's displacement vector from her starting point.

- 3 a** True for all $x \in \mathbb{R}$ as both sides are $6x - 1$.

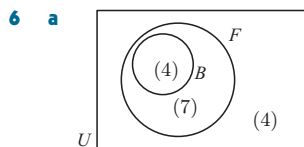
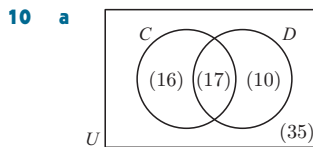
- 4 a** no solutions as $1 \neq 6$

- 7 3** 850 XBC, 950 NGL shares

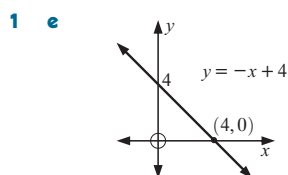
- 3 d** 2×10^{-5} m

- 1 o** $x - 7$

- 1 a** $A_1 = ac$

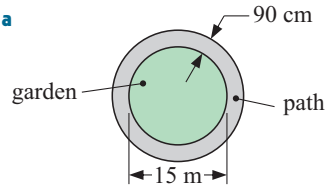


- 6 a** $a = 4$ **b** $\frac{1}{2}, -2$



5 a 18.1 kL

8 a



7 mean ≈ 34.6 chocolates, median = 35 chocolates

1 g ≈ 14.8 kg

3 a median ≈ 45.5 min

3 d table, row 5 | 60 - < 65 | 17 | 62.5 | 1062.5 |

5 e i ≈ 39.0 sec ii ≈ 35.4 sec iii ≈ 43.3 sec
 f ≈ 7.9 seconds

7 a $\frac{1}{12}$ or $\frac{31}{365}$ (more accurate) or $\frac{124}{1461}$ (more accurate again)

3 a €3792.80 b €9800

4 a \$14382 b \$9198

Trina should borrow from the Cash Credit Union.

6 a \$15.65

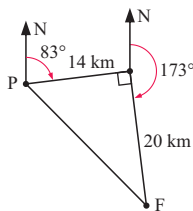
2 b $x \approx 7.0$, $\alpha \approx 60.2^\circ$, $\beta \approx 29.8^\circ$

3 Change question number to 4 i.e., 4 The 3 triangles do not exist. The hypotenuse must be longer than the other two sides.

6 b 5.85°

4 119°

10 a b 24.4 km
 c 138°
 d 318°



4 a $20\sqrt{2}$ m (28.3 m)

8 c (delete – no solution)

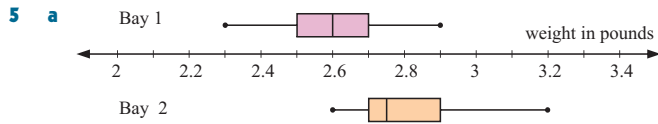
5 a i €6.40 ii €9.40 iii €13.80 b €12.20

6 b £6341.14

- 7 a $u_n = (n + 1)2^n$ b $S_4 = 4 \times 2^5$
 $S_5 = 5 \times 2^6$
d $S_{20} = 20 \times 2^{21}$ $S_6 = 6 \times 2^7$
 $= 41\,943\,040$ c So, we predict $S_n = n \cdot 2^{n+1}$

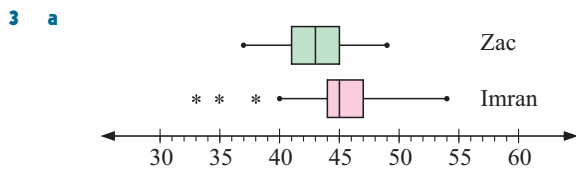
- 7 a 5, 8, 11, 14 matchsticks

- 3 a iii Ind range = 45 cm, Aust range = 52 cm



The distribution from Bay 1 is symmetrical with no outliers.
The distribution from Bay 2 is positively skewed with no outliers.

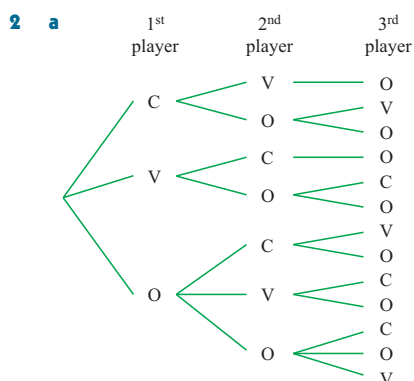
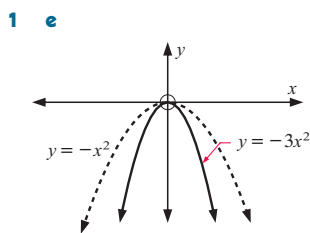
- 8 g We conclude that:
- machine A does cause fewer faulty caps than machine B
 - machine A works with better consistency than machine B, but probably has an intermittent fault that needs attention.



- 1 e Approx $(-4.02, 0.124)$, $(0.225, -7.50)$, $(1.36, -3.44)$, $(2.44, 2.82)$
2 b no solution

- 2 c €31 057

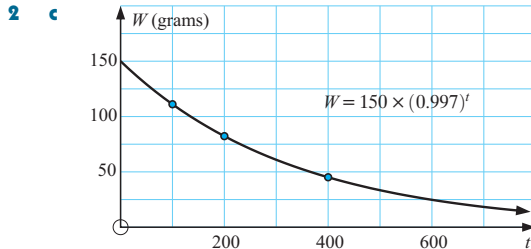
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4 c i 0.000 000 81

3 fraction right of diagram should be: $\frac{11}{20}$

6 b iii 0.0892



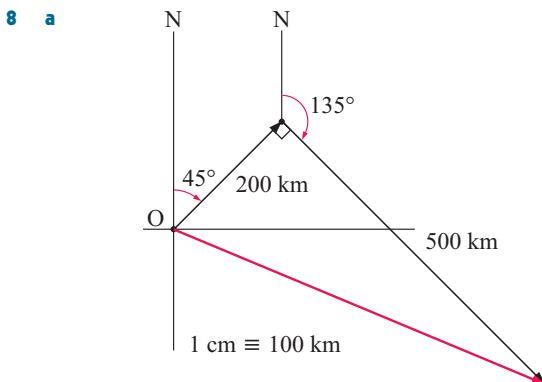
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7 c PQRS is a parallelogram (change b to c)

2 $\vec{DC} = \mathbf{a}$ {as DC and AB are opposite sides of a parallelogram and so these sides are parallel and equal in length.}

Likewise $\vec{BC} = \mathbf{b}$.

2 c $\sqrt{370} \approx 19.2$ km



6 b $x \approx 6.4$

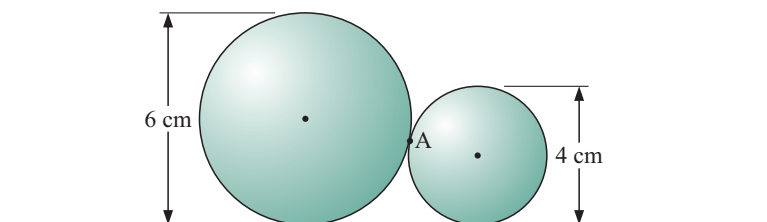
3 43.75 m

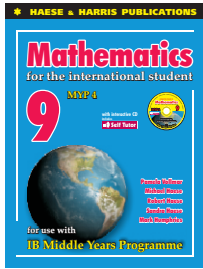
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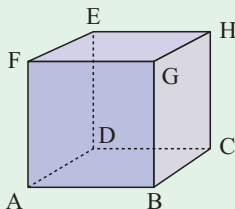
The highlighted line shows that out of 100 000 births, 99 231 females are expected to survive to the age of 15. From that age, the survivors are expected to live for another 67.0 years.

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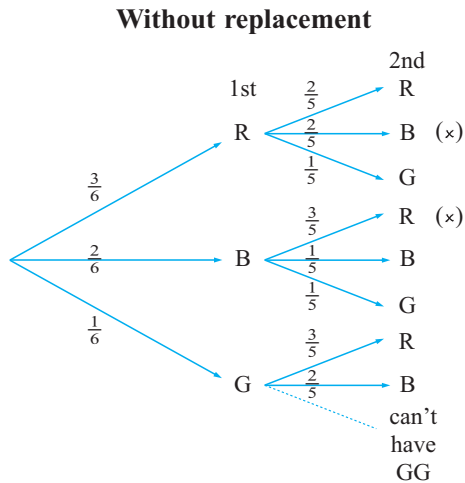
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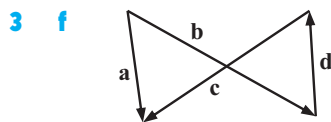
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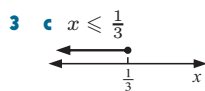


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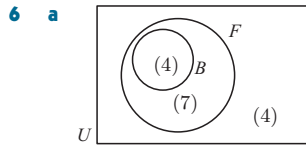
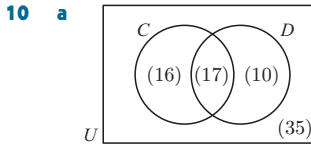
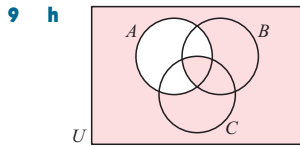
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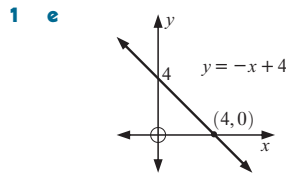
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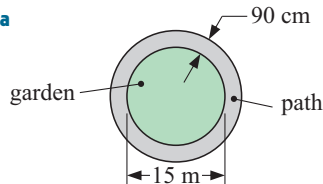
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page 551 ANSWERS EXERCISE 18E

- 4 a $(4 \ 6)$

page 552 ANSWERS EXERCISE 18F

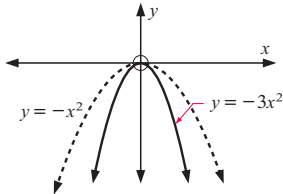
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page 552 ANSWERS REVIEW SET 18B

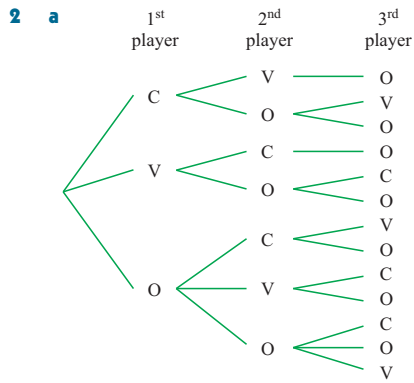
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page 554 ANSWERS EXERCISE 19C

- 1 e



page 558 ANSWERS EXERCISE 20B.2



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- 4 c i 0.000 000 81

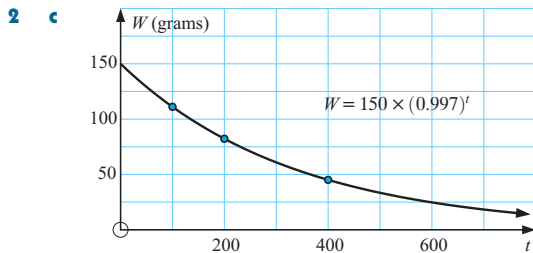
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page 561 ANSWERS EXERCISE 22B

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page 562 ANSWERS EXERCISE 22D



page 566 ANSWERS EXERCISE 23B

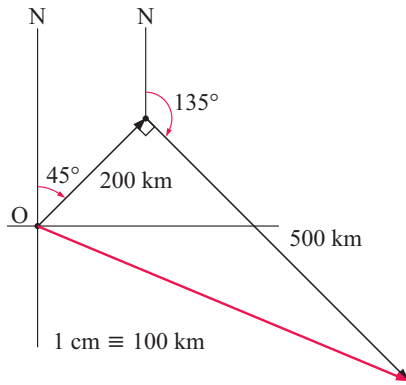
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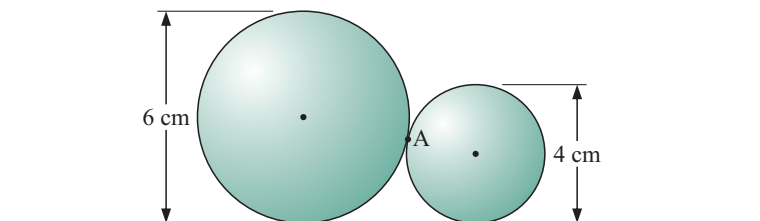
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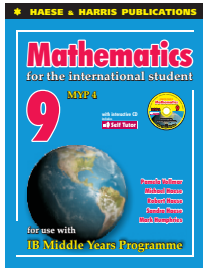
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MYP 4

First edition - 2008 initial print run

page 3 **FOREWORD**

The printable chapter “Logic” is Chapter 28.

page 30 **OPENING PROBLEM** the first paragraph should read:

Holly bought XBC shares for \$2.50 each and NGL shares for \$4.00 each.

page 76 **EXERCISE 3C**

1 $-(7 - x)$

page 99 End of **EXERCISE 4D.2**



LINKS
click here

HOW A CALCULATOR CALCULATES RADICAL NUMBERS

Areas of interaction:
Human ingenuity

page 102 **HIGHLIGHTED TEXT** under heading ‘SUBSETS’ text should be:

Suppose P and Q are two sets. P is a **subset** of Q if every element of P is also an element of Q .

page 102 **HIGHLIGHTED TEXT** under heading ‘UNION AND INTERSECTION’ first line of text should be:

If P and Q are two sets then:

page 107 **EXAMPLE 4** solution:

a **i** $A' = \{-3, -1, 1\}$ {all elements of U not in A }
 ii $B' = \{-1, 0, 2\}$ {all elements of U not in B }

page 107 **EXERCISE 5D**

2 Find D' , the complement of D , given that:
a $U = \{\text{integers}\}$ and $D = \{0\} \cup \mathbb{Z}^+$

page 108 **TEXT** line under the first diagram should read:

Suppose $U = \{1, 3, 4, 6, 9\}$, $A = \{1, 6, 9\}$ and $A' = \{3, 4\}$.

page 108 **TEXT** text under “SUBSETS” should read:

If $B \subseteq A$ then every element of B is also in A .

The circle representing B is placed within the circle representing A .

page 133 **EXERCISE 6G.1** question should read:

1 State the gradient and y -intercept for these lines:

page 155 **INVESTIGATION 2**

Final line: $1000 \div 31.623 = 31.623$ m

page 176 **HISTORICAL NOTE** paragraph second from bottom should read:

The theorem is: There exist no positive integers, x , y and z which satisfy the equation $x^n + y^n = z^n$ for integers $n \geq 3$.

page 214 **EXERCISE 9F**

- 2 e** Add further columns to the table alongside to help find the approximate mean.

page 216 **EXERCISE 9G**

- 1 a** Construct a cumulative frequency table for trout lengths, x cm, using the intervals $21 \leq x < 24$, $24 \leq x < 27$, and so on.

page 224 **TEXT** the last paragraph should read:

The highlighted line shows that out of 100 000 births, 99 231 females are expected to survive to the age of 15. From that age, the survivors are expected to live for another 67.0 years.

page 261 **EXERCISE 11E.2**

- 3** An electrical appliance store advertises a digital television for £1800. They offer a discount of 5% if the item is paid for in cash up front, or terms of 20% deposit plus fortnightly repayments of £64 for one year. How much more would you pay if you bought the television on terms rather than paying cash?

page 263 **TABLE** replace table, bottom of the page

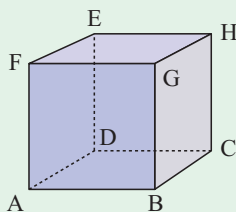
Table of Monthly Repayments per 1000 units of currency							
Loan term (months)	Annual interest rate						
	10.0%	10.5%	11.0%	11.5%	12.0%	12.5%	13.0%
12	87.9159	88.1486	88.3817	88.6151	88.8488	89.0829	89.3173
18	60.0571	60.2876	60.5185	60.7500	60.9820	61.2146	61.4476
24	46.1449	46.3760	46.6078	46.8403	47.0735	47.3073	47.5418
30	37.8114	38.0443	38.2781	38.5127	38.7481	38.9844	39.2215
36	32.2672	32.5024	32.7387	32.9760	33.2143	33.4536	33.6940
42	28.3168	28.5547	28.7939	29.0342	29.2756	29.5183	29.7621
48	25.3626	25.6034	25.8455	26.0890	26.3338	26.5800	26.8275
54	23.0724	23.3162	23.5615	23.8083	24.0566	24.3064	24.5577
60	21.2470	21.4939	21.7424	21.9926	22.2444	22.4979	22.7531

page 266 **TABLE** replace table rows, bottom of the page

row 1:	12	87.9159	88.1486	88.3817
row 8:	54	23.0724	23.3162	23.5615

page 287 **REVIEW SET 12B**

8



The illustrated figure is a cube with sides 6 m. Find:

- a** the lengths of [BD] and [DG]
b the angle [DG] makes with plane ABCD.

page 298 **EXERCISE 13C.2**

- 2 e** Make h the subject of the formula $A = 2\pi rh + \pi r^2$. Use this rearrangement to check your answer to **d**.

page 305 **EXAMPLE 1** first paragraph of the solution should read:

The distribution for A is almost symmetric whereas that for B is positively skewed towards lower numbers of call outs.

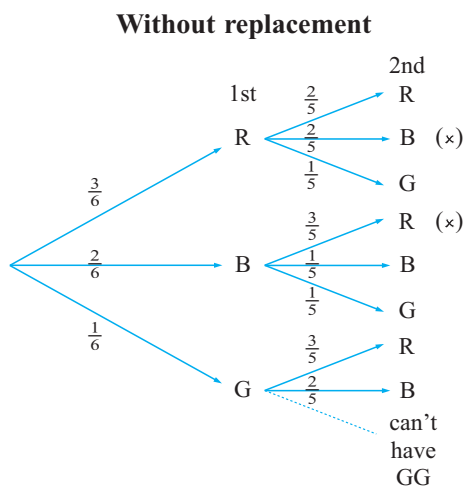
- 4 The batting averages for the English and West Indian teams for a test series were as follows:

- 6 f Compare the measures of centre of each distribution.

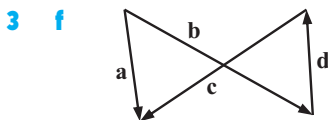
scale factor $\frac{1}{2}$

Tomas has a garden hose with a nozzle that allows water to shoot out in a continuous fine line.

- 3 What are the limitations of the method used in Examples 12 and 13 for graphing the general functions $y = x^2 + bx + c$ or $y = -x^2 + bx + c$?

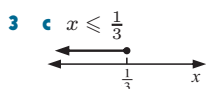


The **distance** travelled by the ship is $|\overrightarrow{AB}| = \sqrt{2^2 + 3^2} = \sqrt{13}$ km.



- 2 b Find Aleksandra's displacement vector from her starting point.

- 3 a True for all $x \in \mathbb{R}$ as both sides are $6x - 1$.



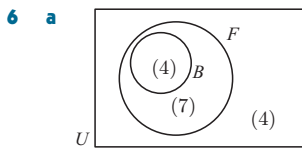
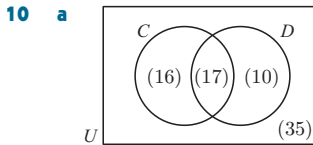
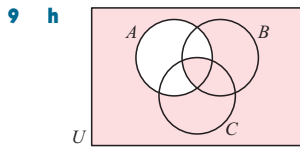
- 4 a no solutions as $1 \neq 6$

- 7 3 850 XBC, 950 NGL shares

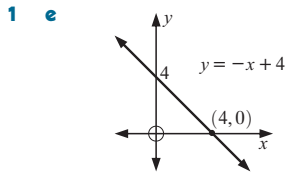
- 3 d 2×10^{-5} m

1 o $x - 7$

1 a $A_1 = ac$



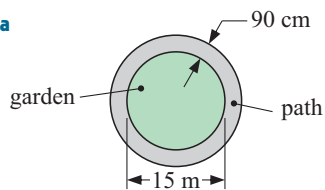
6 a $a = 4$ b $\frac{1}{2}, -2$



6 \$28.14

5 a 18.1 kL

8 a



5 \$87 168

7 mean ≈ 34.6 chocolates, median = 35 chocolates

1 g ≈ 14.8 kg

3 a median ≈ 45.5 min

3 d table, row 5 | 60 - < 65 | 17 | 62.5 | 1062.5 |

5 e i ≈ 39.0 sec ii ≈ 35.4 sec iii ≈ 43.3 sec
 f ≈ 7.9 seconds

page 539 ANSWERS EXERCISE 10E

- 7 a $\frac{1}{12}$ or $\frac{31}{365}$ (more accurate) or $\frac{124}{1461}$ (more accurate again)

page 541 ANSWERS EXERCISE 11E.4

- 3 a €3792.80 b €9800
 4 a \$14382 b \$9198
 Trina should borrow from the Cash Credit Union.

page 541 ANSWERS REVIEW SET 11B

- 6 a \$15.65

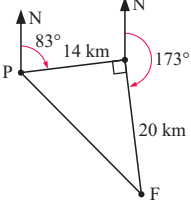
page 541 ANSWERS EXERCISE 12C.3

- 2 b $x \approx 7.0$, $\alpha \approx 60.2^\circ$, $\beta \approx 29.8^\circ$
 3 Change question number to 4 i.e., 4 The 3 triangles do not exist. The hypotenuse must be longer than the other two sides.

page 541 ANSWERS EXERCISE 12D

- 6 b 5.85°

page 542 ANSWERS EXERCISE 12E

- 4 119°
 10 a  b 24.4 km
 c 138°
 d 318°

page 542 ANSWERS EXERCISE 12F

- 4 a $20\sqrt{2}$ m (28.3 m)

page 542 ANSWERS REVIEW SET 12B

- 8 c (delete – no solution)

page 542 ANSWERS EXERCISE 13A

- 5 a i €6.40 ii €9.40 iii €13.80 b €12.20

page 543 ANSWERS EXERCISE 13C.1 add:

- 6 b £6341.14

page 543 ANSWERS EXERCISE 13D

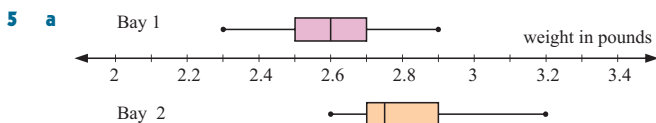
- 7 a $u_n = (n + 1)2^n$ b $S_4 = 4 \times 2^5$
 $S_5 = 5 \times 2^6$
 d $S_{20} = 20 \times 2^{21}$ $S_6 = 6 \times 2^7$
 $= 41\,943\,040$ c So, we predict $S_n = n 2^{n+1}$

page 543 ANSWERS REVIEW SET 13A

- 7 a 5, 8, 11, 14 matchsticks

page 544 ANSWERS EXERCISE 14B

- 3 a iii Ind range = 45 cm, Aust range = 52 cm

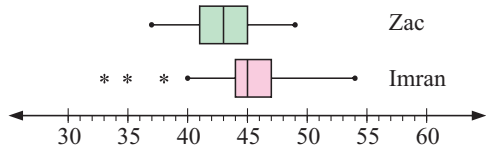


The distribution from Bay 1 is symmetrical with no outliers.
 The distribution from Bay 2 is positively skewed with no outliers.

page 545 ANSWERS EXERCISE 14B last paragraph forms part g

- 8 g We conclude that:
- machine A does cause fewer faulty caps than machine B
 - machine A works with better consistency than machine B, but probably has an intermittent fault that needs attention.

3 a



1 e Approx $(-4.02, 0.124)$, $(0.225, -7.50)$, $(1.36, -3.44)$, $(2.44, 2.82)$

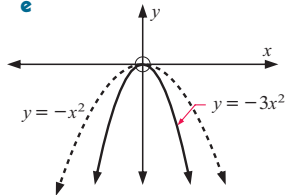
2 b no solution

4 a $(4 \ 6)$

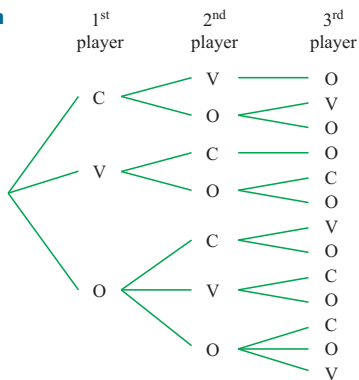
2 c €31 057

7 c \$37 599

1 e



2 a

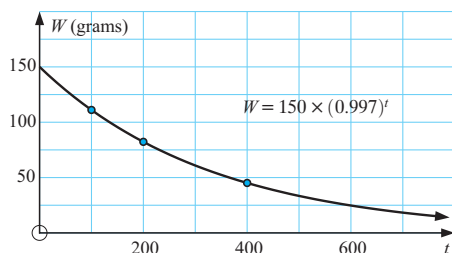


4 c i 0.000 000 81

3 fraction right of diagram should be: $\frac{11}{20}$

6 b iii 0.0892

2 c



page 566 ANSWERS EXERCISE 23B

- 3 b $\sqrt{52}$ km or $2\sqrt{13}$ km
7 c PQRS is a parallelogram (change **b** to **c**)

page 566 ANSWERS EXERCISE 23C

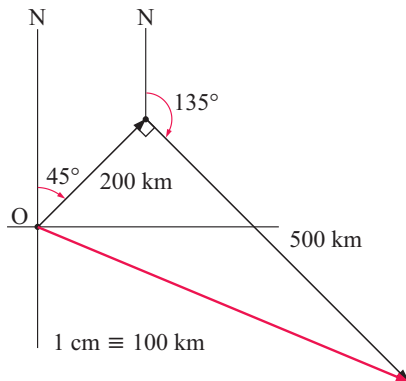
- 2 $\vec{DC} = \mathbf{a}$ {as DC and AB are opposite sides of a parallelogram and so these sides are parallel and equal in length.}
Likewise $\vec{BC} = \mathbf{b}$.

page 568 ANSWERS EXERCISE 23H

- 2 c $\sqrt{370} \approx 19.2$ km

page 569 ANSWERS REVIEW SET 23A

8 a



page 569 ANSWERS EXERCISE 24B

- 6 b $x \approx 6.4$

page 569 ANSWERS EXERCISE 24E

- 3 43.75 m

page 570 ANSWERS REVIEW SET 24A

- 3 $\triangle RQS$ is similar to $\triangle RTP$; $x = 12$

page 571 ANSWERS EXERCISE 25E

- 1 c ≈ 25.4 km

page 571 ANSWERS REVIEW SET 25B

- 3 b 69.3 m^2

CD CHAPTER 26 page 14 ANSWERS REVIEW SET 26A

- 5 b $P = 44$

CD CHAPTER 27 page 22 ANSWERS REVIEW SET 27B

- 3 e ii c 4.4 per 1000 people

CD CHALLENGE SET 8 question 8 should have correct diagram:

- 8 Two spheres of diameter 6 cm and 4 cm touch each other at A as they rest on a horizontal table. How high is A above the table?

