N4 NUMERACY 1.2

This resource is to support pupils in passing the appropriate National 4 Assessment Standard. The questions and marking schemes used are from SQA past papers and as such test the topics in their entirety from grade A to C and *may* include other areas from the course. In addition the questions from **Paper 1** (P1) should be completed **without** the use of a calculator and questions from **Paper 2** (P2) permit the use of a calculator.

Each Assessment Standard is used to ensure pupils have the minimum competency on the specified sub-skills for the National 4 course. As such each Assessment Standard will test grade C work on that specific topic.

This resource is divided into two sections:

- Section A has an example on each sub skill for the relevant Assessment Standard and the marking scheme for these questions
- Section B has extra practice questions on this Assessment Standard and the marking scheme for these questions

Unit Assessment Standard	Sub skills	Section A – Question Number
Numeracy 1.2 Selecting and carrying out calculations	Selected calculations involving: whole numbers fractions decimal fractions whole number percentages ratio proportion *on at least one occasion for each.*	 Q1 Q2 Q3 Q4 Q5 Q6

FORMULAE LIST

Circumference of a circle: $C = \pi d$

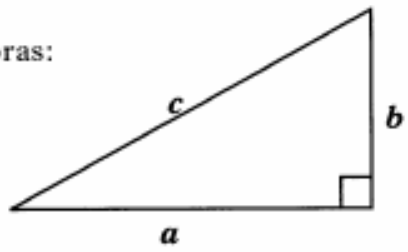
Area of a circle: $A = \pi r^2$

Curved surface area of a cylinder: $A = 2\pi rh$

Volume of a cylinder: $V = \pi r^2 h$

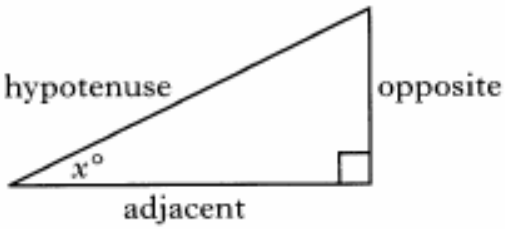
Volume of a triangular prism: $V = Ah$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

Trigonometric ratios in a right angled triangle:

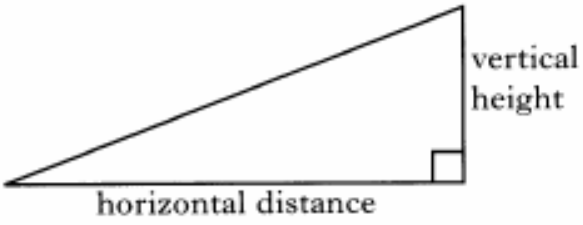


$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Gradient:



$$\text{Gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

Section A

<table>
<tr><th>Q</th><th></th><th>Marks</th></tr>
<tr><td>Q1
P2</td><td>

1. The Sharkey family is going on holiday to France.

They will stay at the "Prenez Les Bains" campsite.

Prenez Les Bains	Tent holiday		Mobile Home holiday	
Start Date	Cost for 7 nights	Cost per extra night	Cost for 7 nights	Cost per extra night
26 June – 2 July	495	39	585	58
3 July – 9 July	535	41	615	65
10 July – 30 July	645	46	825	72
31 July – 13 Aug	699	47	880	75
14 Aug – 28 Aug	670	39	845	73

The family chooses a mobile home holiday.

Their holiday will start on 15 July and the family will stay for 12 nights.

Use the table above to calculate the cost of the holiday.

</td><td>3</td></tr>
<tr><td>Q2
P1</td><td>

1.

$(d)\quad \frac{5}{6}$ of 420

</td><td>2</td></tr>
</table>

Q3 P2

2. Charlie's new car has an on-board computer.

At the end of a journey the car's computer displays the information below.

Journey information

distance **157.5 miles**

average speed **45 miles/hour**

Use the information above to calculate the time he has taken for his journey.

Give your answer in hours and minutes.

4

Q4 P1

1.

(*d*) 80% of 54

2

Q5 P1

7. Joe is making a fruit pudding on Scottish Master Chef.

In the fruit pudding recipe the ratio of raspberries to blackberries is 5:1.

Joe's fruit pudding must contain a **total** of 240 grams of fruit.

Calculate the weight of raspberries in his pudding.

3

Q6 P1	7. When on holiday in Spain, Sandy sees a pair of jeans priced at 65 euros. Sandy knows that he gets 13 euros for £10. What is the price of the jeans in pounds? 	**3**

Section A

MARKING SCHEME

Section A - Marking Scheme

<table>
<tr><th>Q</th><th></th><th>Marks</th></tr>
<tr><td>Q1</td><td>
<table>
<tr><th>Question No</th><th>Give 1 mark for each</th><th>Illustrations of evidence for awarding each mark</th></tr>
<tr><td>1</td><td>Ans: (£) 1185
•1 Find correct cost of 7 nights
•2 Calculate cost of 5 extra nights
•3 Correct addition of above</td><td>
•1 825
•2 $5 \times 72 = 360$
•3 $825 + 360 = 1185$
3K</td></tr>
<tr><td colspan="3">Note:
For a final answer of 864 (12 x 72) with working – award 1/3</td></tr>
</table>
</td><td>3</td></tr>
<tr><td>Q2</td><td>
<table>
<tr><td>(d)</td><td>Ans: 350
•1 Correctly divide by 6
•2 Correctly multiply by 5</td><td>
•1 70
•2 350</td></tr>
<tr><td colspan="3">Note:
In part (d)
<table>
<tr><th>Final Answers</th><th>with working</th><th>without working</th></tr>
<tr><td>350</td><td>2/2</td><td>2/2</td></tr>
<tr><td>70</td><td>1/2</td><td>1/2</td></tr>
<tr><td>2100</td><td>1/2</td><td>1/2</td></tr>
<tr><td>504 (420 ÷ 5 × 6)</td><td>1/2</td><td>1/2</td></tr>
</table>
</td></tr>
</table>
</td><td>2</td></tr>
</table>

Q3

2	**Ans:**	**3(h) 30(mins)**	**4**
	$\bullet^1$	Use correct formula	$\bullet^1$ T = D/S
	$\bullet^2$	Correct substitution	$\bullet^2$ T = 157.5/45
	$\bullet^3$	Correct calculation	$\bullet^3$ 3.5
	$\bullet^4$	Correct time conversion	$\bullet^4$ 3(h) 30(mins)

Note:

Final Answers	**with working**	**without working**
3(h) 30(mins)	4/4	3/4
0.29	2/4	0/4
17.14	2/4	0/4

Q4

(d)	**Ans:**	**43·2**	**2**
	$\bullet^1$	find 10% or equivalent	$\bullet^1$ $54 \div 10$
	$\bullet^2$	correct multiplication	$\bullet^2$ $5{\cdot}4 \times 8 = 43{\cdot}2$

Q5

7	**Ans:**	**200 (grams)**	**3**
	$\bullet^1$	knowing to divide 240 by 6	$\bullet^1$ $240 \div 6 (= 40)$
	$\bullet^2$	knowing to multiply answer to above by 5	$\bullet^2$ 40×5
	$\bullet^3$	all calculations correct within a valid strategy	$\bullet^3$ $= 200$ (grams)

NOTES:

Q6

7	**Ans:**	**(£)50**	
	$\bullet^1$	knowing to divide 65 by 13	$\bullet^1$ $65 \div 13 (= 5)$
	$\bullet^2$	knowing to multiply by 10	$\bullet^2$ $10 \times 5 (= 50)$
	$\bullet^3$	calculations correct within valid strategy	$\bullet^3$ (£)50

NOTES:

3

(i) **Alternative Strategy**

$\bullet^1$	knowing to divide 13 by 10	$\bullet^1$ $13 \div 10 = 1{\cdot}3$
$\bullet^2$	knowing to divide 65 by 1·3	$\bullet^2$ $65 \div 1{\cdot}3$
$\bullet^3$	calculations correct within valid strategy	$\bullet^3$ 50

(ii)

Final answers	**with working**	**without working**
50	3/3	2/3
84·50	2/3	0/3

(iii) Solution may be obtained from successive additions

Section B

Section B – Paper 1 – Questions

Q		Marks
1	**1.** (*d*) Find $\frac{2}{3}$ of 24	**2**
2	**4.** A bed shop is having a sale. *M* **ALL BEDS** ***ONE THIRD* OFF NORMAL PRICE** The normal price of a bed is £768. Find the sale price of this bed. 	**3**
3	**6.** Starting with the smallest, write the following in order. $\frac{1}{5}$ 0·05 51% 0·505 $\frac{5}{10}$	**2**

4	2. In the "Fame Show", the percentage of telephone votes cast for each act is shown below. Plastik Money 23% Brian Martins 35% Starshine 30% Carrie Gordon 12%  Altogether 15 000 000 votes were cast. How many votes did Starshine receive?	**3**
5	8. 720 people were at The Venue on Friday. On Friday, it was only 80% full. On Saturday, The Venue was full.  How many people were at The Venue on Saturday?	**3**
6	**1.** (*d*) 70% of 26	**2**

7	**10.** There are 720 pupils in Laggan High School. The ratio of boys to girls in the school is 5 : 4. How many girls are in the school?	**3**
8	**9.** Three steel nails are shown below.  The lengths of the nails are in the ratio 1 : 3 : 5. The length of the middle nail is 7·5 centimetres. Calculate the length of the large nail.	**3**

Section B – Paper 2 – Questions

Q		Marks
9	**3.** At a school fun day, prizes can be won by throwing darts at a target. Each person throws **six** darts. Points are awarded as follows.	**4**

	POINTS
Centre	5
Middle Ring	3
Outer Ring	2
Miss	0

Prizes are won for **25 points or more**.
Complete the table below to show all the different ways to win a prize.

Number of darts scoring 5 points	Number of darts scoring 3 points	Number of darts scoring 2 points	Number of darts scoring 0 points	Total Points
4	2	0	0	26

4

10

10. Maria is two years old.

Each week she goes to the nursery for 3 full days and 2 half days.

(*a*)

Playwell Nursery

Age	Prices	
	Full day	**Half day**
0–2 years	£28	£15
3–5 years	£23·50	£12·50

Maria's mother pays for her to attend Playwell Nursery.

How much does Maria's mother pay each week? **2**

On Monday, Tuesday and Wednesday Maria goes to nursery from 9 am to 3 pm.

On Thursday and Friday she goes from 9 am to 12 noon.

(*b*) The nursery introduces a new hourly rate.

New Rate £5 per hour

Will Maria's mother save money when the nursery changes to the hourly rate? **3**

Give a reason for your answer.

11

2. Helen travels between Glasgow and Edinburgh by train.

She buys a monthly TravelPass which costs £264·30.

A daily return ticket would cost £16·90.

Last month Helen made 19 return journeys.

How much did she save by buying the TravelPass?

12

6. David is trying to decide which channel mixes to buy for his TV system.

The cost of each is:

- Drama Mix £7
- Sport Mix £20
- Movies Mix £15
- Kids Mix £12
- Music Mix £10

He has decided to buy four different mixes.

One possible selection and its cost are shown in the table below.

(*a*) Complete the table showing all the possible selections and the cost of each.

Selections				Cost
Drama	Sport	Movies	Music	£52

3

(*b*) David can spend up to £55 for his selection.

Which selection can he **not** buy?

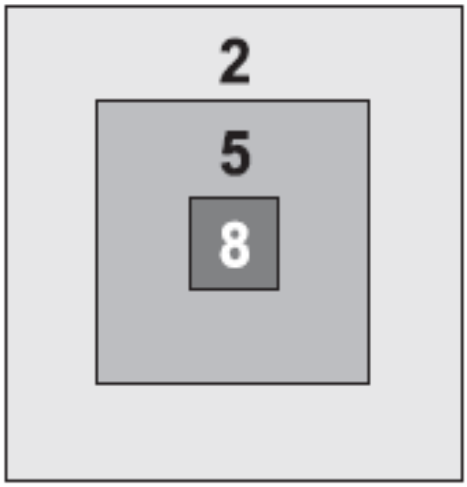
1

13

4. For the school gala day the maths teachers have invented a game.

To play the game each person throws **three** bean bags at the target.

4



Score
8 points for hitting the "Centre" part
5 points for hitting the "Middle" part
2 points for hitting the "Outer" part

All three bean bags must hit the target to win a prize.

Prizes are won for **15 points or more**.

Complete the table below to show all the different ways to win a prize.

Number of bean bags scoring 8 points	Number of bean bags scoring 5 points	Number of bean bags scoring 2 points	Total Points
2	0	1	18

14

3. Stephen is buying new kitchen cabinets.

3

Kitchen Cabinet Price List	Width		
Cabinets	*30 cm*	*50 cm*	*80 cm*
Base	£43	£66	£94
Wall	£39	£58	£92
High	£68	£116	£170
Drawer	£103	£123	£179

He buys:

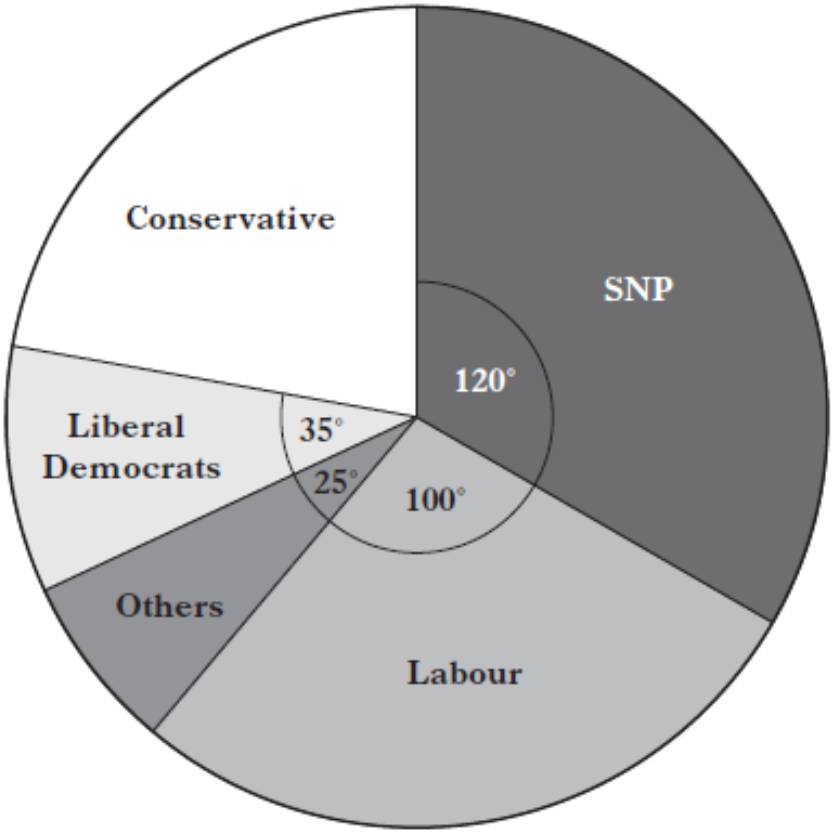
- three Base cabinets of width 50 centimetres
- two Wall cabinets of width 30 centimetres
- one Drawer cabinet of width 80 centimetres.

Calculate the total cost of his kitchen cabinets.

15

8. A survey of 1800 first time voters was carried out.
The pie chart below shows how they would vote at the next election.

3



How many of the 1800 first time voters would vote Conservative?

16	3. In May, the rent for a flat is £795 per month. In September, the rent is to be increased by £75 per month. Ciara and her three friends share equally the cost of renting this flat. How much rent will Ciara pay in September? 	**3**
17	6. The Elaxtra car runs on electricity. It runs for eight hours before needing to be charged. Will the car be able to travel 315 kilometres at an average speed of 42 kilometres per hour before needing to be recharged? **Give a reason for your answer.** 	**3**

18	**11.** Faisal and Jake are going to Belgium on holiday. They book flights for £74 return per person. In Belgium, they hire a caravan for 3 weeks. The caravan costs 287·5 euros per week. Find the total cost of their holiday **in pounds**. (£1 = 1·15 Euros) 	**3**
19	**12.** Gordon is insuring his car with Carins Insurance. The basic annual premium is £765.  As Gordon is a new customer his premium is calculated by taking $\frac{1}{5}$ off the basic annual premium. However, because he wants to pay in monthly instalments, Carins Insurance add an extra 8% to his premium. How much in total will Gordon pay per month?	**4**

20

2. Mr and Mrs Kapela book a cruise to Bruges for themselves and their three children.

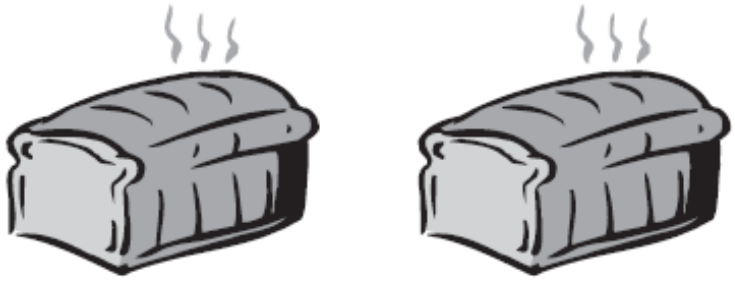
- They depart on 27 June
- Mr and Mrs Kapela share an outside cabin and their three children share an inside cabin
- There is a 20% discount for each child

Calculate the total cost of the cruise.

3

Mini Cruise to Bruges, Belgium		
	Price per person	
Departure Date	Inside Cabin (£)	Outside Cabin (£)
16 May	236	250
30 May	244	274
13 June	266	300
27 June	275	310
12 July	291	325
26 July	312	355
9 Aug	327	370

21	7. Sally can record and store television programmes using her TV plus system. The display on her system shows • maximum storage space 80 hours • storage space remaining 13%.  The new TV series of "City Life" has 12 episodes each lasting 55 minutes. Can she record the whole of the "City Life" series on the remaining storage space? **Give a reason for your answer.**	**4**
22	**2.** Carly bought a new printer for her computer. The time taken to print a document is proportional to the number of pages printed. It takes 7 minutes to print a document with 63 pages. How many pages can be printed in half an hour? 	**3**

23	3.  Ben needs 550 grams of flour to bake two small loaves of bread. (*a*) How many **kilograms** of flour will he need for thirteen small loaves?	**2**
24	5. For safety reasons the speed limit outside Fairfield Park is 20 miles per hour. The distance between the speed limit signs outside Fairfield Park is half a mile. A van took 2 minutes to travel between these signs. Was the van travelling at a safe speed? **Give a reason for your answer.** 	**3**

25	**7.** Rowan wants to buy 13 theatre tickets. The price of one ticket is £12·50. The theatre has a special online offer of four tickets for the price of three. Rowan makes use of the special online offer. How much does Rowan pay for the 13 theatre tickets? 	**3**
26	**3.** Andrew is on holiday in Canada and has 600 Canadian Dollars. He spends 565 Canadian Dollars during his holiday. At the end of his holiday he changes the remaining Canadian Dollars to Pounds. The exchange rate is £1 = 1·74 Canadian Dollars. How much will he receive?	**3**

Section B

MARKING SCHEME

Section B – Paper 1 – Marking Scheme

Q 1 — **Marks: 2**

(d)	**Ans: 16**		
	•[1] correct division by 3	•[1] 8	
	•[2] correct multiplication by 2	•[2] 16	**2K**

NOTES:

In part (d)

(i) For correct final answer without working — award 2/2

(ii) For $24 \div 2 \times 3$ leading to 36 — award 1/2

(iii) For $0{\cdot}6... \times 24$ leading to 14·4, 15·8, 16·0, 16·1, etc — award 1/2

2 — **Marks: 3**

4			**Ans: (£) 512**	**3**	
			•[1] divide by 3		•[1] 768/3
			•[2] correct division		•[2] 256
			•[3] correct subtraction	**(KU)**	•[2] 512

Notes:

(i)

Final Answers	with working	without working
512	3/3	2/3
537.60 (70% of 768)	2/3	0/3

3

6	**Ans:** **0·05 $^{1}/_{5}$ $^{5}/_{10}$ 0·505 51%**	
	•[1] for any three numbers in the correct order from smallest	•[1] Three from 0·05 $^{1}/_{5}$ $^{5}/_{10}$ 0·505 51%
	•[2] for further two correct leading to correct solution	•[2] **2R**
NOTES: (i) Numbers need not be written in original form (ii) For a final answer of 51% 0·505 $^{5}/_{10}$ $^{1}/_{5}$ 0·05 – award1/2		

2

4

Question No	Give 1 mark for each •	Illustrations of evidence for awardin each mark •
2	**Ans: 4 500 000**	
	•[1] Evidence of selecting 30%	•[1] 30% of 15 000 000
	•[2] Finds 10% of 15 000 000 or equivalent	•[2] 1 500 000
	•[3] Correct multiplication of above answer by 3 or equivalent	•[3] 4 500 000

Note:

(i) Evidence of 30% may include e.g. ÷ 10 followed by ÷ 3

(ii)

Final Answers	with working	without working
4 500 000	3/3	2/3
500 000 (÷ 10 ÷ 3)	2/3	0/3

3

5

8	**Ans: 900** •[1] valid strategy •[2] correct use of valid strategy •[3] all calculations correct, must include a division	•[1] 80% = 720 •[2] 720 ÷ 8 × 10 •[3] 900 **3R**	**3**

NOTES:

(i)

Final Answer	**With Working**	**Without Working**
900	3/3	2/3

(ii) a valid strategy may be trial and improvement

(iii) The third mark can be awarded for calculations leading to: 1296 (720 + 80% of 720); 864 (720 + 20% of 720); or 576 (80% of 720)

6

1	**d**		**Ans: 18·2** •[1] find 10% (or equivalent) •[2] correct multiplication	**2** **(KU)**	•[1] 26/10 (= 2·6) •[2] (2.6 x 7 =)18·2	**2**

Notes:

(i) In part (d), for a correct final answer without working – award 1/2

7

10	**Ans: 320**		
	•[1] For knowing to divide 720 by 9	•[1]	$720 \div 9$
	•[2] For knowing to multiply answer to above by 4	•[2]	80×4
	•[3] All calculations correct within a valid strategy	•[3]	320 3R

3

Notes:

(i) **Alternative strategy**

•[1]	For knowing to scale up, 1st step	•[1]	eg 10 : 8
•[2]	For knowing to continue to scale up	•[2]	eg 100 : 80
•[3]	All calculations correct within a valid strategy	•[3]	(400 :) 320

(ii)

Final answers	**with working**	**without working**
320	3/3	2/3
400 : 320	3/3	2/3

(iv) For an incorrect calculation of the no. of boys followed by a correct subtraction from 720 – award 1/3

8

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9	**Ans: 12·5 (cm)**	
	•[1] knowing to find 1 unit of measure	•[1] 7·5 ÷ 3 (= 2·5)
	•[2] knowing to find length of large nail	•[2] 2·5 × 5
	•[3] calculations correct within a valid strategy	•[3] 12·5 (cm)
		3 **3**

NOTES:

(i) **Final answers** **with working** **without working**

12·5	3/3	1/3
4·5 (7·5 ÷ 5 × 3)	1/3	0/3

(ii) Strategy may be 7·5 × 5 ÷ 3

Section B – Paper 2 – Marking Scheme

<table>
<tr><th>Q</th><th></th><th>Marks</th></tr>
<tr><td>9</td><td>
<table>
<tr><th>Question No</th><th>Give 1 mark for each</th><th>Illustrations of evidence for awarding each mark</th></tr>
<tr><td>3</td><td>
Ans:
<table>
<tr><td>6</td><td>0</td><td>0</td><td>0</td><td>30</td></tr>
<tr><td>5</td><td>1</td><td>0</td><td>0</td><td>28</td></tr>
<tr><td>5</td><td>0</td><td>1</td><td>0</td><td>27</td></tr>
<tr><td>5</td><td>0</td><td>0</td><td>1</td><td>25</td></tr>
<tr><td>4</td><td>1</td><td>1</td><td>0</td><td>25</td></tr>
</table>
•1 For one correct row
•2 For a second correct row
•3 For a third correct row
•4 For two final rows correct
</td><td>4R</td></tr>
<tr><td colspan="3">Comment:
• Please mark according to marking instructions
• Scripts from centres where the Chief Invigilator has reported that the Correction Notice had not been read out will be actioned by the PA prior to certification.</td></tr>
</table>
</td><td>4</td></tr>
</table>

10

Question No	Give 1 mark for each	Illustrations of evidence for awarding each mark	
10 (a)	**Ans: (£) 114**		
	$\bullet^1$ Correct information chosen from table	$\bullet^1$ 28 and 15	
	$\bullet^2$ Correct calculation	$\bullet^2$ $3 \times 28 + 2 \times 15 = (£)\ 114$ 2K	**2**
(b)	**Ans: No, it will cost her £6 more**		
	$\bullet^1$ Knowing to calculate the number of hours Maria is at nursery	$\bullet^1$ $3 \times 6 + 2 \times 3 = 24$ hours	
	$\bullet^2$ Knowing to multiply no. of hours by 5 and calculations correct	$\bullet^2$ $24 \times 5 = £120$	
	$\bullet^3$ Compares cost with answer to (a)	$\bullet^3$ No 120 > 114 ie £6 more per week 3R	**3**

Notes:

In part (a) For a correct final answer without working – award 2/2

In part (b)

(i) For correct reason involving correct comparison without further working – award 3/3

(ii) **Alternative strategy**

$\bullet^1$	Calculating the cost of $\frac{1}{2}$ days and full days	$\bullet^1$ 15 and 30
$\bullet^2$	Comparing the cost of $\frac{1}{2}$ days	$\bullet^2$ 15 = 15, ie cost is same
$\bullet^3$	Comparing the cost of full days	$\bullet^3$ 30 > 28, ie £2 more per full day

11

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
2	**Ans:** $2{\cdot}96 \times 10^{-2}$ •[1] correct coefficient •[2] correct multiplier	•[1] $2{\cdot}96$ •[2] $\times 10^{-2}$ **2K**
NOTES:		

2

12

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6	**Ans:** -17°C •[1] subtract 26° from 9° •[2] correct subtraction	•[1] 9 - 26 •[2] = -17(°C) **2K**
NOTES:		

2

13

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4	**Ans: see table** •1 one row and total correct •2 a further row and total correct •3 a further row and total correct •4 a further 2 rows and totals correct	8 points / 5 points / 2 points / Total 2 / 0 / 1 / 18 3 / 0 / 0 / 24 2 / 1 / 0 / 21 1 / 2 / 0 / 18 1 / 1 / 1 / 15 0 / 3 / 0 / 15 **4R**

4

14

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	**Ans: (£)455** •1 finding the cost of 3 base cabinets •2 finding the cost of 2 wall cabinets •3 adding the cost of drawer cabinet to above	•1 3×66 (= 198) •2 2×39 (= 78) •3 (£)455 **3K**

NOTE:

(i)	Final Answer	With Working	Without Working
	455	3/3	2/3

3

15

8	**Ans: 400**		
	$\bullet^1$	identify angle for Conservative	$\bullet^1$ 80
	$\bullet^2$	correct division by 360 or equivalent	$\bullet^2$ $80 \div 360 = 0{\cdot}22...$
	$\bullet^3$	correct multiplication by 1800 or equivalent	$\bullet^3$ $0.22... \times 1800 = 400$ **3K**

NOTES:

(i) **Alternative Strategy**

$\bullet^1$	identify angle for Conservative	$\bullet^1$	80
$\bullet^2$	identify number of votes for 1°	$\bullet^2$	$1800 \div 360 = 5$
$\bullet^3$	correct multiplication	$\bullet^3$	$5 \times 80 = 400$

(ii) For a correct final answer without working award 2/3

3

16

Question	Marking Scheme Give 1 mark for each •	Max Mark	Illustrations of evidence for awarding a mark at each •
3	**Ans: (£) 217·50**	3	
	$\bullet^1$ know to add 75 and 795		$\bullet^1$ 75 + 795
	$\bullet^2$ know to divide new rent by 4		$\bullet^2$ 870/4
	$\bullet^3$ all calculations correct, must include a division and correct communication of money	(RE)	$\bullet^3$ 217·50

Notes:

(i)

Final Answers	with working	without working
217·50	3/3	2/3
217·5	2/3	1/3
290 (870/3)	2/3	0/3
273·75 $(795 + 4 \times 75)/4$	1/3	0/3
1012·50 $(795 \times 5 + 75)/4$	1/3	0/3
292·50 $(795 + 5 \times 75)/4$	1/3	0/3

3

17

Question	Marking Scheme Give 1 mark for each •	Max Mark	Illustrations of evidence for awarding a mark at each •
6	**Ans: Yes, 7·5 is less than 8**	**3**	
	•[1] know to use formula to find time		•[1] T = 315/42
	•[2] correct time calculation		•[2] 7·5
	•[3] correct comparison of time	**(RE)**	•[3] Yes, 7·5 is less than 8

Notes:

(i) Alternative Strategies

•[1] D = 42 × 8
•[2] 336
•[3] Yes, 336 > 315

•[1] S = 315/8
•[2] 39.4
•[3] Yes, 39·4 < 42

(ii) for a correct final answer and correct conclusion without working – award 1/3

(iii) the reason must include a comparison or an implied comparison eg 'only', 'more than' or 'less than'.

(iv) ignore variations in rounding

3

18

Question	Marking Scheme Give 1 mark for each •	Max Mark	Illustrations of evidence for awarding a mark at each •
11	**Ans: (£) 898**	**3**	
	•[1] find cost of caravan in pounds		•[1] (287·5/1·15 =) 250
	•[2] cost of caravan **or** flights		•[2] (3 × 250 =) 750 **or** (2 × 74 =) 148
	•[3] total cost	**(KU)**	•[3] (148 + 750 =) 898

Notes:

(i) Final Answers	with working	without working
898	3/3	2/3
1139·88 ((287·5×1·15) × 3 + 2 × 74)	2/3	0/3
1010·50 (3 × 287·5 + 2 × 74)	2/3	0/3
972 ((250 + 74) × 3)	2/3	0/3
878·70 (1010.50 ÷ 1·15)	2/3	0/3
824 (750 + 74)	2/3	0/3
324 (287·5/1·15 + 74)	1/3	0/3
862·5 (3 × 287·5)	1/3	0/3

3

19

Question No	Give 1 mark for each	Illustrations of evidence for awarding each mark
12	Ans: (£) 55·08	
	$\bullet^1$ Knowing to calculate price for a new customer	$\bullet^1$ $\frac{1}{5}$ of 765 = 153 765 − 153 (= 612)
	$\bullet^2$ Knowing to find 8% of above answer and add to above	$\bullet^2$ 0·08 × 612 = 48·96 612 + 48·96 (= 660.96)
	$\bullet^3$ Knowing to find monthly installment	$\bullet^3$ 660.96 ÷ 12
	$\bullet^4$ All calculations correct within valid strategy	$\bullet^4$ = (£) 55·08 4R

Notes:

(i) **Alternative strategy**

$\bullet^1$ Knowing to find base monthly premium	$\bullet^1$ 765 ÷ 12 = 63·75
$\bullet^2$ Knowing to find monthly premium for new customer	$\bullet^2$ 63·75 ÷ 5 = 12·75 63·75 - 12·75 = 51
$\bullet^3$ Knowing to find 8% of above and add to above	$\bullet^3$ 8% of 51 = 4·08 51 + 4·08
$\bullet^4$ All calculations correct	$\bullet^4$ =(£) 55·08

(ii)

Final answers	with working	without working
55·08	4/4	3/4
68·85	3/4	0/4
46·92	3/4	0/4
13·77	3/4	0/4
4·08	3/4	0/4
624·24	2/4	0/4
165·24	2/4	0/4
12·24	1/4	0/4

4

20

2	**Ans: (£)1280** $\bullet^1$ correct price for either outer or inner cabin $\bullet^2$ correct price for one child $\bullet^3$ correct total cost	$\bullet^1$ 310 or 275 $\bullet^2$ $275 - (275 \times 0{\cdot}2) = 220$ $\bullet^3$ $(2 \times 310) + (3 \times 220) = (£)1280$ **3K**	**3**

NOTE:

(i)	**Final answers**	**with working**	**without working**
	1280	3/3	2/3
	1294 (310 & 275 swapped)	2/3	0/3

21

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	**Ans: No, only 10·4 hours available and 11 hours required** •1 calculate storage space remaining •2 calculate time needed for series •3 correctly convert to same units •4 correct conclusion with reason within a valid strategy	•1 0·13 × 80 = 10·4 (hours) •2 12 × 55 = 660 (minutes) •3 11 (hours) or 624 (minutes) •4 No, only 10·4 hours available and 11 hours required 4R

NOTES:

(i) **Alternative strategies:**

•1 used space	•1 0·87 × 80 = 69·6 hours = 4176 (mins)
•2 add time for series	•2 12 × 55 + 4176 = 4836 (mins)
•3 convert to hours	•3 4836 ÷ 60 = 80·6 (hours)
•4 correct conclusion with reason within a valid strategy	•4 No, a further 0·6 hours is required
•1 calculate time needed for series	•1 12 × 55 = 660 minutes
•2 correctly convert to hours	•2 11 hours
•3 calculate storage space needed	•3 11 ÷ 80 × 100 = 13·75(%)
•4 correct conclusion with reason within a valid strategy	•4 No, 13% storage space remains and she needs 13·75%

(ii) For a correct final answer and correct reason without working award 2/4

(iii) The reason must include a comparison or an implied comparison eg using 'only', 'more than', 'less than' or 'not enough'

4

4

22

2	**Ans:**	**270 pages**	
	•[1]	Divide 63 by 7	•[1] $63 \div 7$
	•[2]	Multiply above answer by 30	•[2] 9×30
	•[3]	Calculations correct	•[3] 270
			3K

Notes:

(i) Calculations must include multiplication and division.

(ii) For a final answer of 252 (28 minutes) or 315 (35 minutes) with working – award 1/3

(iii) **Alternative strategy**

•[1]	Divide 30 by 7	•[1]	$30 \div 7$
•[2]	Multiply above answer by 63	•[2]	4·29 x 63
•[3]	Calculations correct	•[3]	270 (·27)

3

23

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark •
3 (a)	**Ans: 3.575 (kg)**	
	•[1] Finds mass of 1 loaf	•[1] $550 \div 2 = 275$
	•[2] Finds correct mass in kg of 13 loaves	•[2] $275 \times 13 \div 1000 = 3{\cdot}575$ (kg) **2K**

Notes:

In part (a)

(i) **Alternative solution**

•[1]	Finds correct multiplier	•[1]	$13/2 = 6.5$
•[2]	Finds correct value in kg	•[2]	$(6.5 \times 550) / 1000 = 3.575$ (kg)

(ii)

Final Answers	**with working**	**without working**
3.575 (kg)	2/2	2/2
3 kg 575 g	2/2	2/2
3.58 (kg)	2/2	2/2
3.6 (kg)	2/2	2/2
4 (kg)	2/2	0/2
3575 (g)	1/2	1/2
7.15 (kg)	1/2	1/2

2

24

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5	**Ans: Yes, speed only 15 mph**	
	•[1] beginning to find speed or equivalent	•[1] S = 0·5/2; D = 20 × 2; T = 0·5/20
	•[2] correct speed calculation or equivalent	•[2] S = (0·5/2) × 60 = 15
	•[3] correct conclusion with reason	•[3] = 15 mph, so van is travelling at a safe speed
		3R

3

NOTES:

(i) **Alternative Strategy**

•[1]	correct strategy	•[1] 2 mins ----- ½ mile
•[2]	correct proportion calculation	•[2] 60 mins ----- 15 miles
•[3]	correct conclusion with reason	•[3] = 15 mph, so van is travelling at a safe speed

(ii) For a correct final answer and correct conclusion without working award 1/3

(iii) The reason must include a comparison or an implied comparison eg using 'only', 'more than', 'less than' or 'safe speed'

(iv) Ignore variations in rounding

25

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	**Ans: (£)125**	
	$\bullet^1$ strategy for groups of four	$\bullet^1$ $3 \times 3 + 1$
	$\bullet^2$ knowing to find the cost of groups of four	$\bullet^2$ $3 \times 37{\cdot}50$
	$\bullet^3$ total cost and all calculations correct	$\bullet^3$ $112{\cdot}50 + 12{\cdot}50 = (£)125$
		3R

3

NOTES:

(i) **Alternative Strategies**

$\bullet^1$	strategy for groups of four	$\bullet^1$ $3 \times 3 + 1$
$\bullet^2$	knowing to multiply	$\bullet^2$ $10 \times 12{\cdot}50$
$\bullet^3$	all calculations correct	$\bullet^3$ (£)125·00
$\bullet^1$	find cost of 13 tickets	$\bullet^1$ $13 \times 12{\cdot}50$
$\bullet^2$	strategy	$\bullet^2$ $13 \times 12{\cdot}50 - (3 \times 12{\cdot}50)$
$\bullet^3$	all calculations correct	$\bullet^3$ (£)125·00

(ii) The third mark can only be awarded to candidates who perform at least two calculations

(iii) For a correct final answer without working award 2/3

26

3	**Ans: (£) 20·11** •[1] correct subtraction •[2] correct division •[3] correct communication of money	•[1] 600 – 565 = 35 •[2] 35 ÷ 1·74 = 20·1149... •[3] (£)20·11 **3K**	**3**

NOTES:

Final answers	**with working**	**without working**
20·11	3/3	2/3
20·1	2/3	1/3
20	2/3	1/3
60·90 (35 × 1·74)	2/3	0/3
344·83 (600 ÷ 1·74)	2/3	0/3
324·71 (565 ÷ 1·74)	2/3	0/3