

Exemplar Student answers with examiner comments

About this booklet

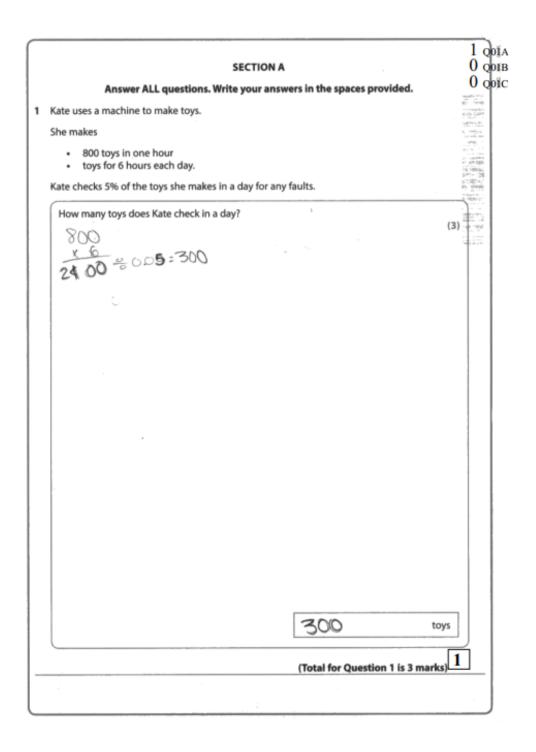
This booklet has been produced to support mathematics teachers delivering the new Functional Skills Mathematics specification (first assessment summer 2019).

The booklet looks at questions from the Retired Set 6 which is available on the web as a practice paper. It shows real student responses to these questions, and how the examining team follow the mark schemes to demonstrate how the students would be awarded marks on these questions.

How to use this booklet

Our examining team have selected a student on the pass mark. Following each question, you will find the mark scheme for that question and then the student response with accompanying examiner comments on how the mark scheme has been applied and the marks awarded, and on common errors for this sort of question.







PMAT1/N	PMAT1/N06							
Question	Process	Mark	Mark Grid	Evidence				
Q1	Begins to work with total number of toys or percentage Full process to find total number of toys checked	1 or 2 or	A AB	800 × 6 (-4800) OR 800 × 5 ÷ 100 (=40) oe '4800' × 5 ÷ 100 (=240) oe OR '40' × 6 (=240)				
	Accurate figure	3	ABC	240				
	Total marks for question	3						

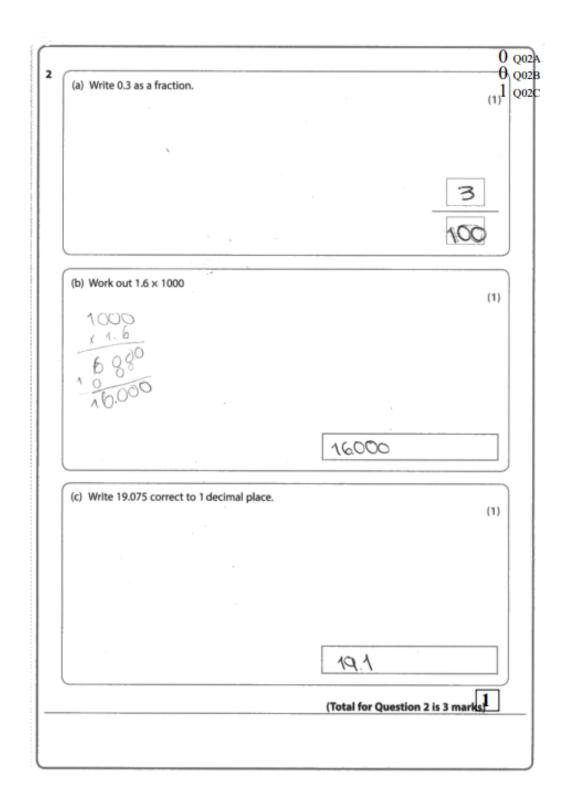
Examiner comments

1. 1 mark.

The learner finds the total number of toys made in 6 hours. The first mark is awarded.

They try to find 5% by dividing by 0.05, multiplying by this figure would have been correct.







Question	Process	Mark	Mark Grid	Evidence
Q2(a)	Accurate figure	1	A	3 oe
Q2(b)	Accurate figure	1	В	1600
Q2(c)	Accurate figure	1	С	19.1
	Total marks for question			

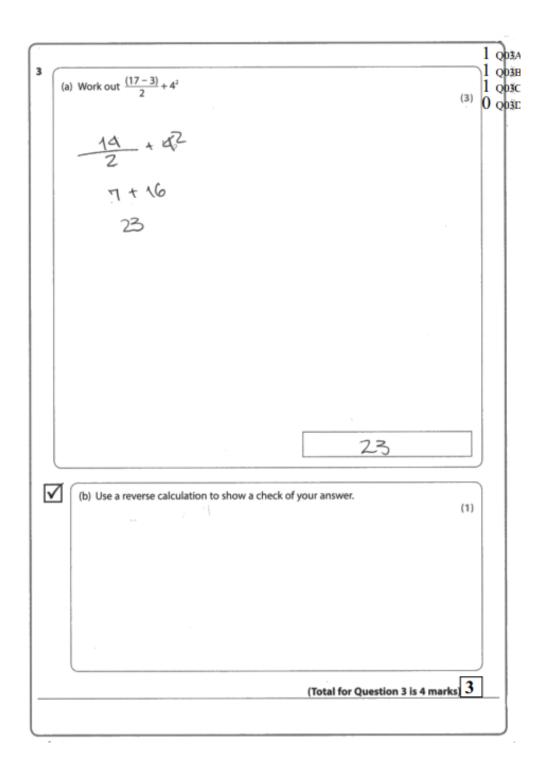
Examiner comments

- 2a) 0.3 is 3/10 so this underpinning question is incorrectly answered. **0 marks**
- 2b) An inability to multiply by 1000 is displayed. The learner puts down 3 zeros and writes 16.

None of this is correct. The ability to multiply by 10 or 100 or 1000 is a specification reference. **0** marks

2c) A correctly rounded figure is given. 1 mark







Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Begins to work with operators	1 or	A	17 – 3 (=14) OR 4 × 4 (=16)
	Full process to find accurate figure	2 or	AB	'14' ÷ 2 + '16' (=23)
	Accurate figure	3	ABC	23
Q3(b)	Valid reverse calculation check	1	D	Valid check, e.g. 23 – 7 = 16
	Total marks for question	4		

Examiner comments

3a) 3 marks

The correct answer is seen.

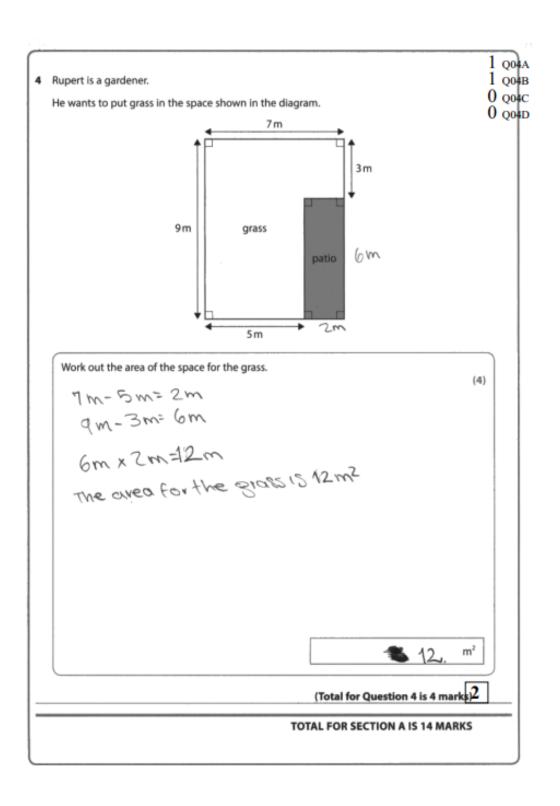
This is supported by the clear working.

3b) **0 marks**

No attempt at a check is given.

23 - 7 = 16 would have been a simple example for this leaner to use.







Question	Process	Mark	Mark Grid	Evidence
Q4	Process to find a missing length	1	A	9-3 (=6) or 7-5 (=2)
	Process to find one relevant area	1 or	В	9 × 7 (=63) or 3 × 7 (=21) or 9 × 5 (=45) or '6' × 5 (=30) or '2' × 3 (=6) or '6' × '2' (=12)
	Full process to find total area	2 or	BC	'63' - '12' (-51) or '21' + '30' (-51) or '45' + '6' (-51)
	Accurate figure	3	BCD	51
	Total marks for question	4		I.

Examiner comments

4) 2 marks

Both missing lengths are found, one is enough for the first mark.

6 x 2 is sufficient for the second mark as it is a relevant area.

No more working is given and so no more marks can be awarded.



			SECTION B			
	Answer /	ALL questions. Writ	e your answers in the	spaces provided.		
ı	Alan takes part in a he	ealth study.			1	Q01
	He records the time h	e spends looking at	different screens on M	londay.		Q01 Q01
		computer	5.5 hours		U	Qui
		mobile phone	40 minutes			
		TV	$3\frac{3}{4}$ hours			
						339 378
	Alan thinks he spent n	nore than 10 hours in	total looking at differe	ent screens on Monday.		i
	Is Alan correct? Show why you think	k this				
	Composer		2145		(3)	
	mobile:	(O minute	2	20 5 60		
	TU: 3. 9	(Shows		(6 (6		
	5:30			13		
	6:10					
	(6)	¥ 6	55 hours loc 4	king of diffe	ret	
	NO. Alon	Shen, O.	55,100.0	9		
	Screens	ON HONOW	~			
			6.5	11 so ewod 6	SKNON	
						7
			(Total f	or Question 1 is 3 ma	rks 2	



PMAT1/C	06			
Question	Process	Mark	Mark Grid	Evidence
Q1	Process to convert at least one time Full process to work with time (may not all be converted) Valid decision with accurate figures	1 1 or 2	A B	e.g. $0.5 \times 60 \ (=30)$ or $40 \div 60 \ (=\frac{2}{3})$ or $\frac{3}{4} \times 60 \ (=45)$ May be seen or implied in subsequent working e.g. 5 (hrs) 30 (mins) + 40 (mins) + '3 (hrs) 45 (mins)' (=9 hrs 55 mins) OR '600' - '225' - '330' - 40 (=5 mins) No AND 9 (hrs) 55 (mins) oe OR
	Total marks for question	3		No AND 5 (mins shorter)

Examiner comments

1) 2 marks

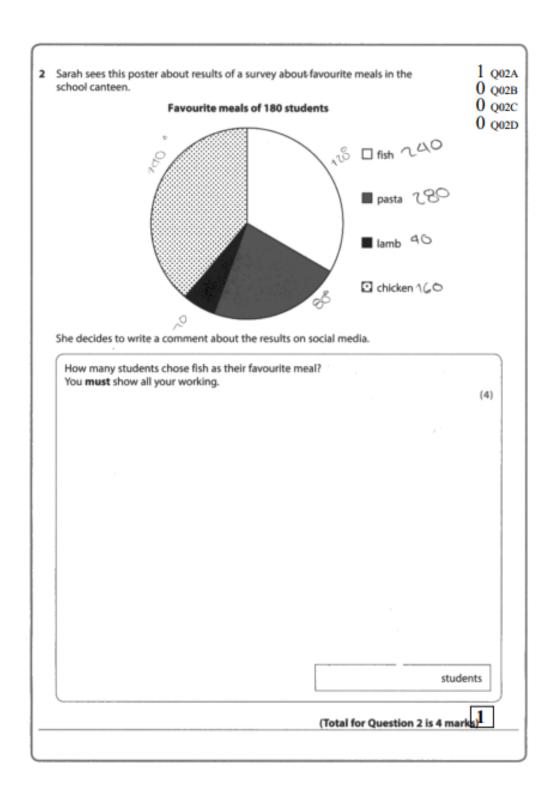
The time conversion mark can be given when we see 3.45 hours, the notation is not quite correct, but the conversion is seen. 5:30 is also fine.

The full process to add time has been awarded, with the benefit being given to the leaner.

It has been judged that they attempt to add 3 45, 5 30 and 40 by the counting on seen.

The answer is incorrect as the 3 hours 45 mins have not been added on correctly.







Question	Process	Mark	Mark Grid	Evidence
Q2	Measures value of angle in "fish" sector	1	A	120° (± 2°)
	Works with proportion	1 or	В	e.g. 360 ÷ {angle} (=3) OR 360 ÷ 180 (=2) OR 180 ÷ 360 (=0.5) OR {angle} ÷ 360 (=0.33)
	Full process to find the number of students	2 or	BC	e.g. 180 ÷ '3' (=60) OR {angle} ÷ '2' (=60) OR '0.5' × {angle} (=60) OR '0.33' × 180 (=60)
	Accurate figure from working	3	BCD	60 Ft their angle NB This question requires working shown
	Total marks for question	4		

Examiner comments

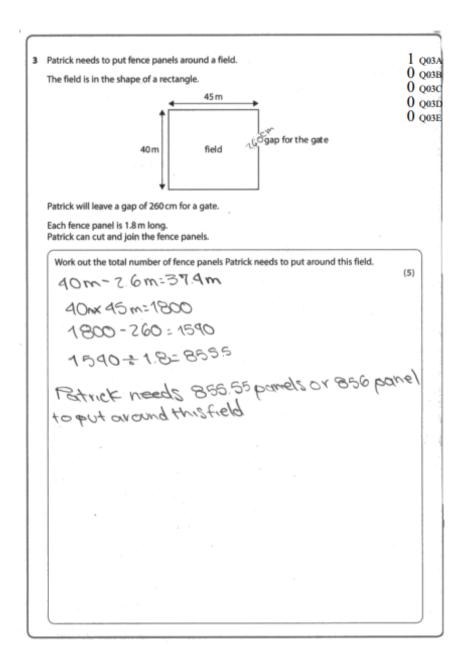
2) 1 mark

120 degrees is written near the correct sector.

This has been deemed working.

No other working is shown.





(Total for Question 3 is 5 marks)



Question	Process	Mark	Mark Grid	Evidence
Q3	Uses consistent units	1	A	e.g. 2.6 or 4000 or 4500 or 17000 or 180 May be seen or implied in subsequent calculations
	Process to find perimeter of the field or works with the gap or the panel size	1 or	В	40 × 2 + 45 × 2 (=170) OR 40 - '2.6' (=37.4) oe OR 40 ÷ 1.8 (=22.22) or 45 ÷ 1.8 (=25) or '2.6' ÷ 1.8 (=1.44)
	Process to find total required length of fence panels or number of panels for at least 2 lengths	2 or	BC	e.g. '170' - '2.6' (=167.4) OR '170' ÷ 1.8 (=94.4) OR '22.22' + '25' (=47.22) or '25' × 2 (=50)
	Full process to find total number of fence panels required	3 or	BCD	e.g. '167.4' ÷ 1.8 (=93) OR '94.4' - '1.44' (=93) OR '25' × 2 + '22.22' × 2 - ('2.6' ÷ 1.8) (=93)
	Accurate figure	4	BCDE	93
	Total marks for question	5		

Examiner comments

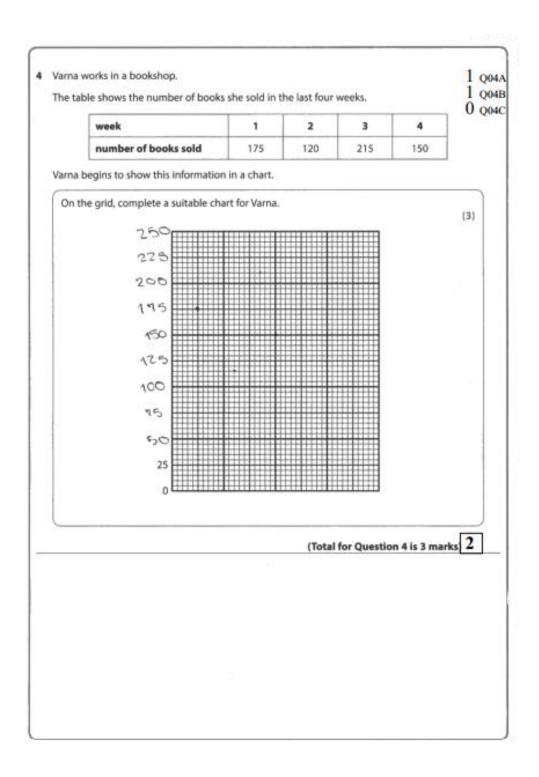
3) 1 mark

2.6 has been converted from 260 cm, a correct conversion is seen, 1 mark can be given.

The answer of 855.55 or 856 comes from the use of area rather than perimeter. No marks can be awarded for this.

Although 40 -2.6 is seen it is not used and in fact 1800 -260 directly contradicts this. Hence by the rules of choice no mark is awarded.







Question	Process	Mark	Mark Grid	Evidence
Q4	Begins to draw a chart	1 or	A	One of: Completes linear scale Correct labels on horizontal and vertical axes Accurate plotting
	Develops chart	2 or	AB	Two of: Completes linear scale Correct labels on horizontal and vertical axes Accurate plotting
	Fully correct chart	3	ABC	All of: Completes linear scale Correct labels on horizontal and vertical axes Accurate plotting Minimum labels (W)1, 2, 3, 4, week(s), (number of) books (sold)
	Total marks for question	3		

Examiner comments

4) 2 marks

The linear scale can be clearly seen.

The points can just be seen plotted. They have been deemed to be within tolerance and so two marks have been awarded.

The points have been plotted in the order of the table so the plotting mark can be given.



5	He sold 840 cars last year. 720 of these cars were petrol cars. All the other cars he sold were electric cars. Joe writes a report for his manager. He states,	1 Q05A 1 Q05B 1 Q05C
l	"I sold 6 times as many petrol cars as electric cars last year."	_
	Is this statement correct? You must show your working. $840 - 720 = 120$ $120 \times 6 = 720$	(3)
	VES, Joe sold 6 times as many petrol cars	
	? 985984 r10	
	પ્લક (Total for Question 5 is 3 mark	3



Question	Process	Mark	Mark Grid	Evidence
Q5	Begins to work with total or multiplier	1 or	A	e.g. 840 – 720 (=120) OR 720 ÷ 6 (=120) OR 840 ÷ (6 + 1) (=120)
	Full process to find figures to compare	2 or	AB	e.g. '120' × 6 (=720) OR 840 – 720 (=120) AND 720 ÷ 6 (=120) OR '120' ÷ 720 (=0.166) AND 1 ÷ 6 (=0.166) oe OR 840 ÷ (6 + 1) (=120) AND 840 – 720 (= 120)
	Valid decision with accurate figures supported by working	3	ABC	e.g. Yes AND 720 (from '120' × 6) OR Yes AND 120 (from two correct processes) OR Yes AND 0.16(6) (from two correct processes) oe OR Yes AND 6:1 (from correct simplification of 720: '120') NB This question requires working shown
	Total marks for question	3		

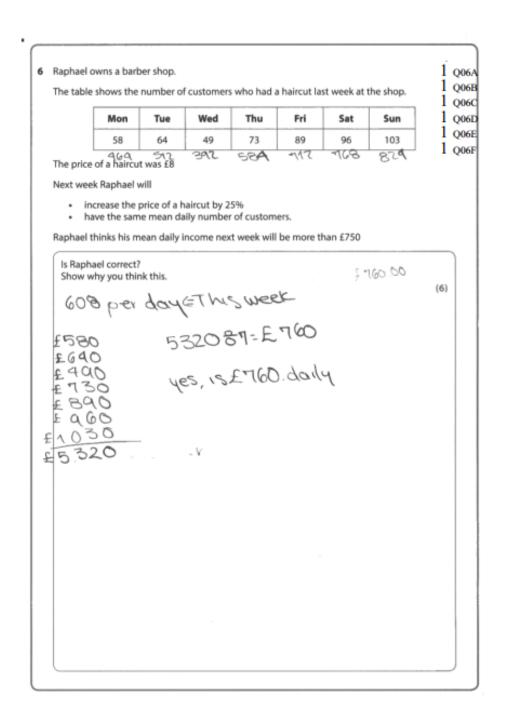
Examiner comments

5) **3 marks**

A decision and accurate figures are seen in this example. Full working is seen.

All the marks can be awarded.





(Total for Question 6 is 6 marks).



Question	Process	Mark	Mark Grid	Evidence
Q6	Begins to work with mean	1 or	A	58 + 64 + 49 + 73 + 89 + 96 + 103 (=532) oe
	Full process to find the mean	2	AB	'532' + 7 (=76) oe Allow process to find mean income for marks A and B
	Begins to work with percentage	1 or	С	e.g. 8 × 25 + 100 (=2) oe OR {mean} × 25 + 100 (=19) oe OR '608' × 25 + 100 (=152) oe
	Full process to find percentage increase or difference	2	CD	e.g. 8 + '2' (=10) oe OR {mean} + '19' (=95) oe OR '608' + '152' (=760) oe OR 750 - '152' (=592) oe
	Process to find a total daily income or mean income or number of haircuts	1 or	E	e.g. {number of daily haircuts} × '10' or '76' × '10' (=760) OR '95' × 8 (=760) OR '76' × 8 (=608) OR 750 + '10' (=75)
	Valid decision with accurate figures	2	EF	e.g. Yes AND (£)760 OR Yes AND (£)608 and (£)592 OR Yes AND 75 and 76 (mean number of haircuts)
	Total marks for question	6		1

Examiner comments

6) 6 marks

Although 10 is not seen it has clearly been used to find 580, 690, 490 etc.

The mean of these number is then found.

The accurate answer is given with a decision.

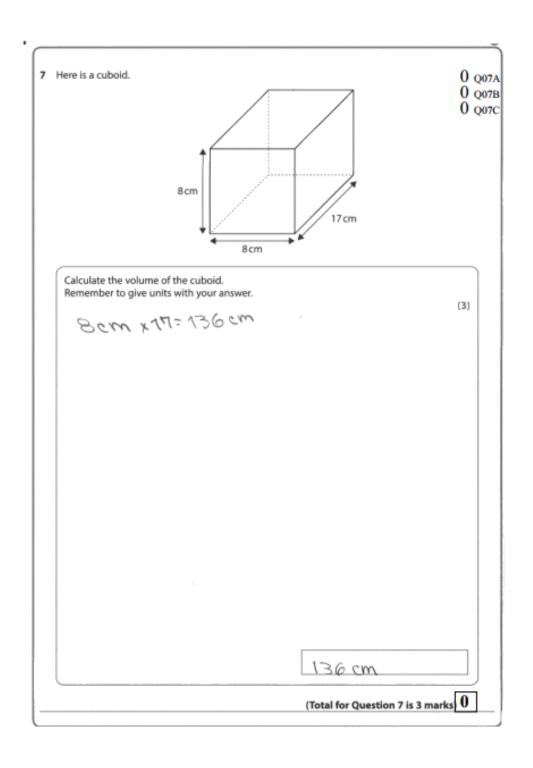
Marks C, D and E are implied by accurate use of 10. A and B are awarded for the mean.

F is awarded for accuracy and decision.

If the leaner had made an error in calculating 10 we would not be able to see this and others figures would not have been accurate then the implied marks could not be awarded.

Showing working is always the better option so partial marks can be awarded when errors are seen.







Question	Process	Mark	Mark Grid	Evidence
Q 7	Full process to find volume	1 or	A	8 × 8 × 17 (=1088)
	Accurate figure	2	AB	1088
	Correct unit of capacity	1	С	cm ³
	Total marks for question			

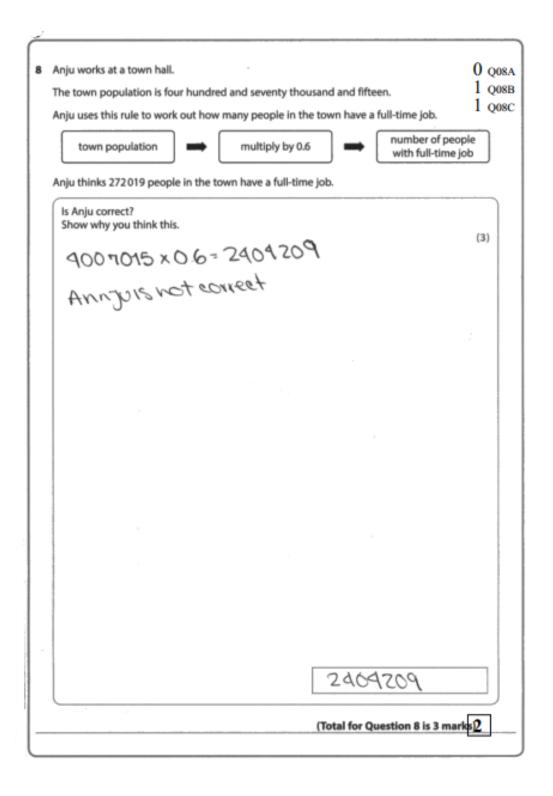
Examiner comments

7) 0 marks

No attempt at volume is made.

The units stated are incorrect.







Question	Process	Mark	Mark Grid	Evidence
Q8	Correct figure	1	A	470015
	Full process to find figures to compare	1 or	В	{population} × 0.6 (=282 009) OR 272 019 + 0.6 (=453 365)
	Valid decision with accurate figures ft their population provided at least 5 digits	2	ВС	No AND 282 009 OR No AND 470 015 and 453 365
Total marks for question 3				

Examiner comments

8) 2 marks

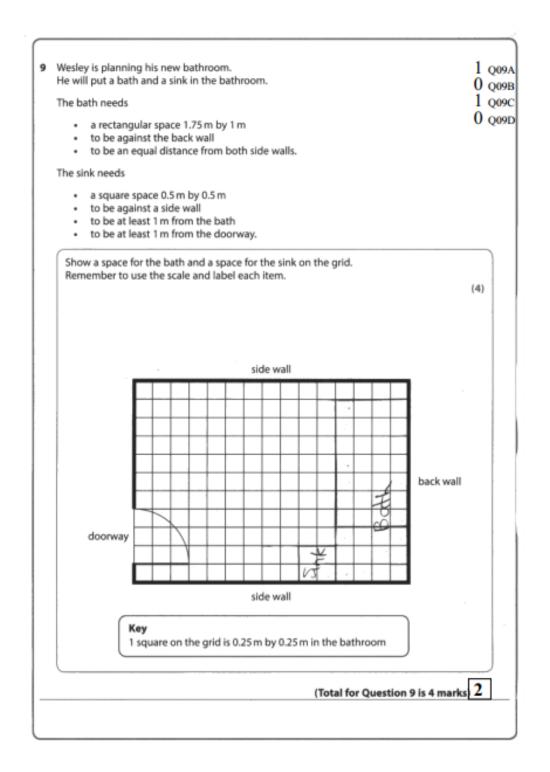
400 is written as a number not taking into account place value.

No first mark can be awarded.

The formula is correct, the process mark can be awarded.

The initial figure is 7 digits long, the answer is accurate for their figure, the decision is also correct for their figure so the last mark can be awarded as a follow through.







Question	Process	Mark	Mark Grid	Evidence
Q9	Begins to draw the bath	1 or	A	Rectangle with 2 of: side length 7 squares side length 4 squares against the back wall equal distance from the side walls
	Fully correct drawing for bath	2	AB	Rectangle with all of: side length 7 squares side length 4 squares against the back wall and equal distance from the side walls
	Begins to draw the sink	1 or	С	Square with 2 of: side length 2 squares against the side wall at least 4 square lengths from the doorway and the bath
	Fully correct drawing for sink	2	CD	Square with all of: side length 2 squares against the side wall at least 4 square lengths from the doorway and the bath NB rectangle and square do not need to be labelled
	Total marks for question	4		

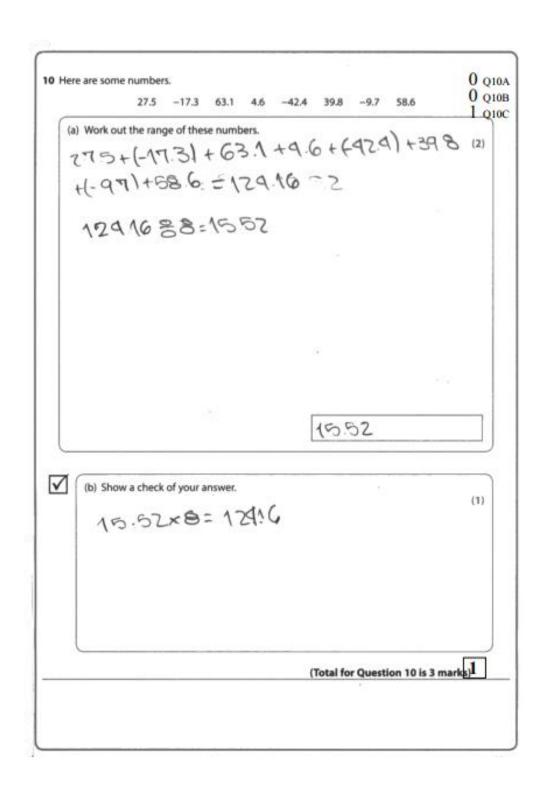
Examiner comments

9) 2 marks

A rectangle 4 squares by 7 squares is drawn along the back wall. However, this is not equidistant form each side wall so only 1 mark can be awarded.

A correctly sized square is drawn but it is to close the bath so only the C mark can be awarded.







Question	Process	Mark	Mark Grid	Evidence
Q10(a)	Process to find the range	1 or	A	63.142.4 (=105.5) OR -42.4 to 63.1
	Accurate figures	2	AB	105.5
Q10(b)	Valid check	1	С	Valid check, e.g. 105.5 - 63.1 = 42.4 OR 106 - 63 = 43
	Total marks for question			

Examiner comments

10a) 0 marks

This question requires the range to be found.

However, this learner attempts to find the mean, so no marks are awarded.

10b) 1 mark

Although part a is incorrect, this learner does a reverse check of what they believe to be the range. We can credit this as a check of their answer and the mark has been awarded.



11 Charly is organising a party. She needs to buy 90 party plates. She finds this offer. pack of 6 plates normal price £3.55 now \frac{1}{5} off the normal price	1 Q11A 1 Q11E 1 Q11C 1 Q11E
Charly has £45 to spend on the plates. Does Charly have enough money to buy 90 plates?	
Show why you think this. £ 3.55 = 5-50.71 £ 3.55 £ 3.55 £ 3.55	(5)
90=6=15 EZ.89	
15 50.84-£42 60	
Charles have enough money to buy	
90 plates.	

£92.60

(Total for Question 11 is 5 marks)5



Question	Process	Mark	Mark Grid	Evidence		
Q11	Process to find required number of packs or cost per plate	1	A	90 + 6 (=15) OR 3.55 + 6 (=0.59)		
	Process to work with fraction	1 or	В	e.g. 3.55 + 5 (=0.71) OR '53.25' + 5 (=10.65) OR '0.59' + 5 (=0.118)		
	Full process to find discounted cost of a pack or a plate	2	BC	e.g. 3.55 - '0.71' (=2.84) OR '53.25' + 5 × 4 (= 42.6) oe OR '0.59' + 5 × 4 (=0.473) oe		
	Full process to find figures to compare	1 or	D	'2.84' × '15' (=42.6) OR 45 ÷ 90 (=0.5) OR 3.55 × '15' (=53.25) OR 45 + '15' (=3)		
	Valid decision with accurate figure	2	DE	Yes AND (£)42(.6) OR Yes AND (£)0.5 and (£)0.4(73) OR Yes AND (£)3 and (£)2(.84)		
	Total marks for question 5					

Examiner comments

11) 5 marks

A multi stepped problem.

The fractional reduction is found first award marks B and C.

90 divided by 6 is done next, we can now award the A mark.

The full process to work out the cost is seen so the D mark can be awarded.

The sentence written clearly indicates the decision and along with the accurate figure is enough for the last mark to be awarded.

Total marks learner has achieved for the whole paper is 32 marks, which is the threshold pass mark for this retired set.