

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
LEVEL 1 FUNCTIONAL SKILLS MATHEMATICS

09865

TASK AND ANSWER BOOKLET PRACTICE PAPER 6

TIME: 1 HOUR 30 MINUTES

INSTRUCTIONS

Fill in all the boxes below. Make sure your personal details are entered correctly. Use **BLOCK LETTERS**.

Your surname or family name

Your first forename (if any)

Your second forename (if any)

Date of birth

Centre name

Centre number

Your OCR candidate number

At the beginning of this booklet you will find tear off Resource Documents. You will need to refer to these documents to complete the tasks.

You will also need:

- a pen with black ink
- a calculator
- a ruler

YOU HAVE 1 HOUR AND 30 MINUTES TO COMPLETE THE THREE TASKS

For each task, make sure that you:

- read the questions carefully before starting
- write your answers in this booklet
- clearly show how your working leads to your answers

2 marks are available in each task when you show you have checked your work.

When you have finished, hand this booklet and all the Resource Documents to the supervisor.

Ofqual Qualification Reference Number: 500/8910/9

FOR EXAMINER USE ONLY		
Question No	Mark	Total
TASK A		
	/	/20
	/	
	/	
	/	
	/	
TASK B		
	/	/20
	/	
	/	
	/	
	/	
TASK C		
	/	/20
	/	
	/	
	/	
	/	
Total	/60	

This document consists of 24 pages. Any blank pages are indicated.

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RESOURCE DOCUMENTS

The Resource Documents on pages 5, 7 and 9 contain information to help you to answer the tasks in this booklet.

- The resource documents are perforated along the left hand side, so they can be removed from the task and answer booklet.
- Your supervisor will instruct you when to remove the resource documents, before you start the assessment.
- Please fold pages 5, 7 and 9 along the perforated strip before removing from the task and answer booklet.

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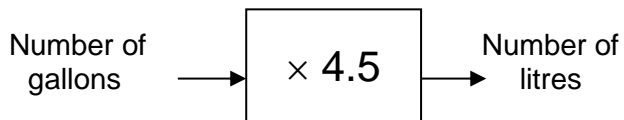
TASK A – HAPPY HOUR

RESOURCE DOCUMENT 1

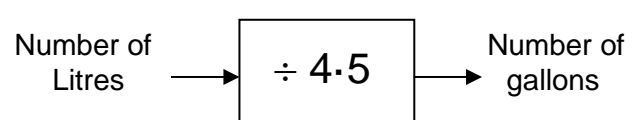
Diesel price for 1 litre



Change gallons to litres.



Change litres to gallons.



Manufacturer's figures for the diesel Sedan

Type of driving	Number of miles driven on one gallon	Number of litres to drive 100 kilometres
Around town (urban)	45	6.3
Motorways and main roads (extra urban)	67.5	4.2
Combined	54	5.2

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TASK B – LOFT INSULATION

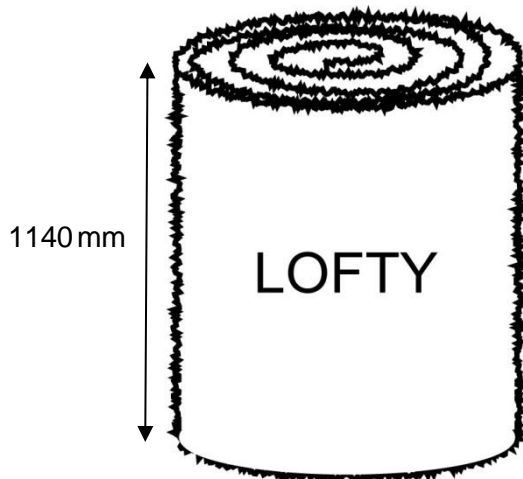
RESOURCE DOCUMENT 1

- Loft insulation can be laid flat with its edges touching
- Loft insulation can be cut with scissors
- The full depth of loft insulation can be built up in layers



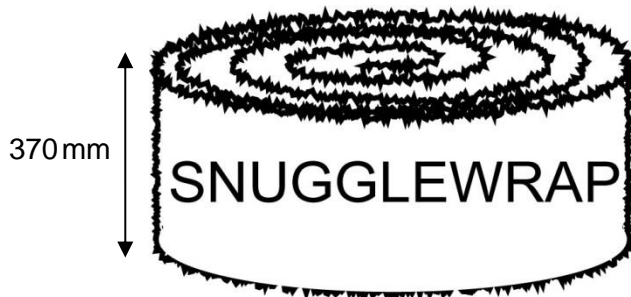
Details of Hi-Loft Roll

370 mm wide
4 m long
200 mm thick
£9.98 per roll



Details of Lofty Roll

1140 mm wide
4 m long
100 mm thick
£6.00 per roll



Details of Snugglewrap Roll

370 mm wide
5.3 m long
160 mm thick
£7.50 per roll

Note:

1000 m	=	1 km
100 cm	=	1 m
10 mm	=	1 cm

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TASK C – HOLIDAY MONEY

RESOURCE DOCUMENT 1

CAFÉ MATTERHORN MENU	
	PRICE (CHF)
DRINKS	
BEER	3.80
COFFEE	2.80
COFFEE WITH MILK	3.80
HOT CHOCOLATE	4.20
APPLE JUICE	3.80
FOOD	
APPLE STRUDEL	7.30
PLUM TART	6.00
ROSTI	5.00
PIZZA	8.50



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TASK AND ANSWER PAGES

Do not turn over this page until you are told to do so by your supervisor.

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TASK A – HAPPY HOUR**You will need Task A Resource Document 1**

- Q1 (a)** Geoff drives a Sedan car that uses diesel.
How many miles can he drive his Sedan, around town, on one gallon of diesel?

(1 mark)

- (b)** What is the cost of one **gallon** of diesel?

(3 mark)

Geoff drives 250 miles around town and uses half a tank of diesel.



- (c)** About how many litres of diesel does the tank hold when full?
Explain your answer.

(3 marks)

A local garage has a “Happy Hour” between 12:00 and 13:00, when it sells fuel at “2p off” the price of **each complete** litre.

Geoff lives in the town and 5 km from the garage.

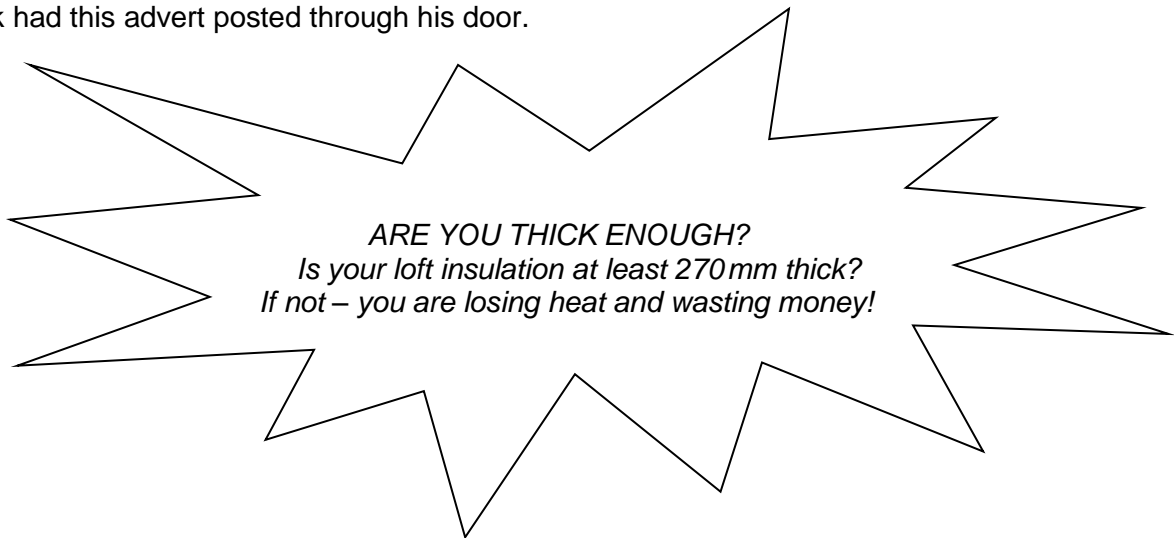
- (d)** How many litres of diesel does Geoff use when he drives from home to the garage and back?

(4 marks)

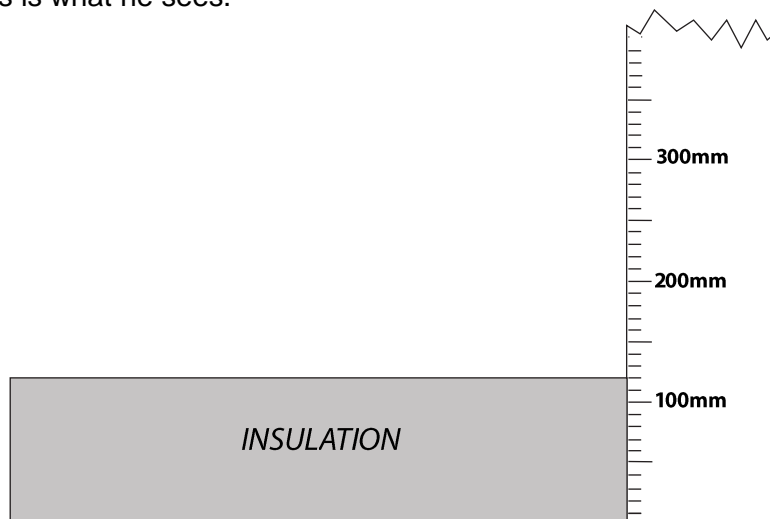
TASK B – LOFT INSULATION

You will need Task B Resource Document 1

Jack had this advert posted through his door.



Jack decides to investigate his loft and measure the existing insulation.
 This is what he sees.



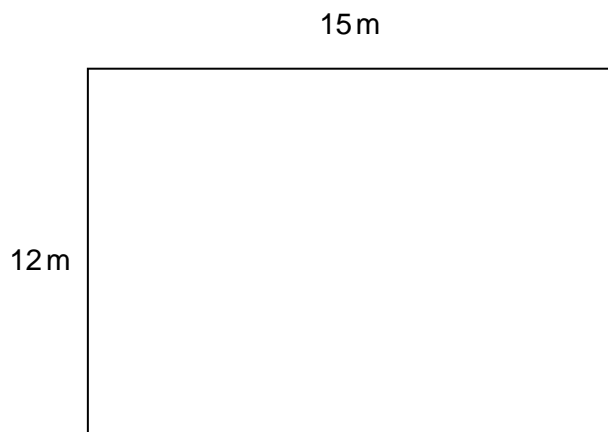
Q2 (a) (i) How thick does the ruler show Jack's loft insulation is?

(1 mark)

(ii) Why should Jack add extra insulation to his loft? Give a reason for your answer.

(2 marks)

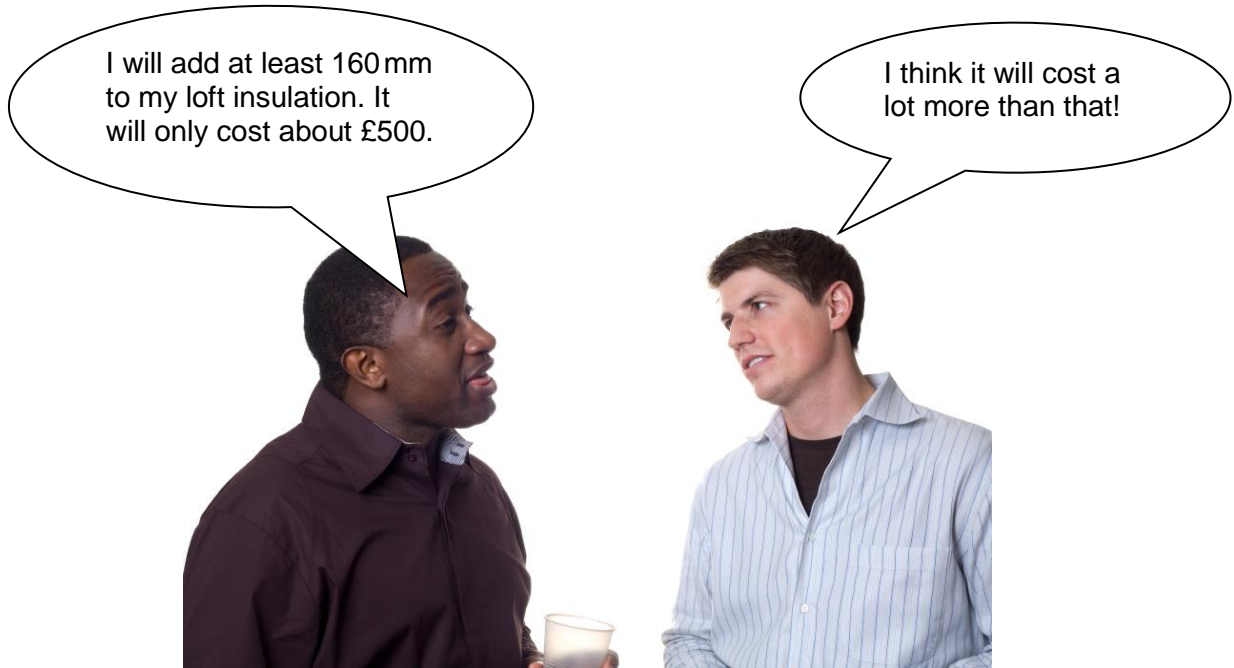
Jack measures his loft and draws this sketch.



(b) What is the area of Jack's loft?
Give the units of your answer.

(3 marks)

Jack decides to lay some extra insulation in his loft and talks to his friend Phil.



Jack looks on the internet to find out the price of insulation.

- (c) (i) Show that Jack's extra insulation will cost about £690 if he chooses Snugglewrap.

(5 marks)

- (ii) Jack does not want to pay this much for his extra insulation.
Explain whether using Hi-Loft or Lofty will give him a better deal.

(3 marks)

Jack insulates his loft and in the next year he saves £170 on his heating bill.

- (d) After how many years will Jack's savings on his heating bill cover the cost of the extra insulation?

Explain your answer.

(4 marks)

Examiner
use only
(Q2)

Checking (2 marks)

Examiner
use only
(Checking)

Total marks

Examiner
use only
(Total)

END OF TASK B

TASK C – HOLIDAY MONEY

You will need Task C Resource Document 1



Paul is on holiday in Switzerland where the money used is Swiss francs (CHF).

Paul has changed £100 into 155 CHF.

Q3 (a) (i) How many Swiss francs (CHF) did he get for each £1?

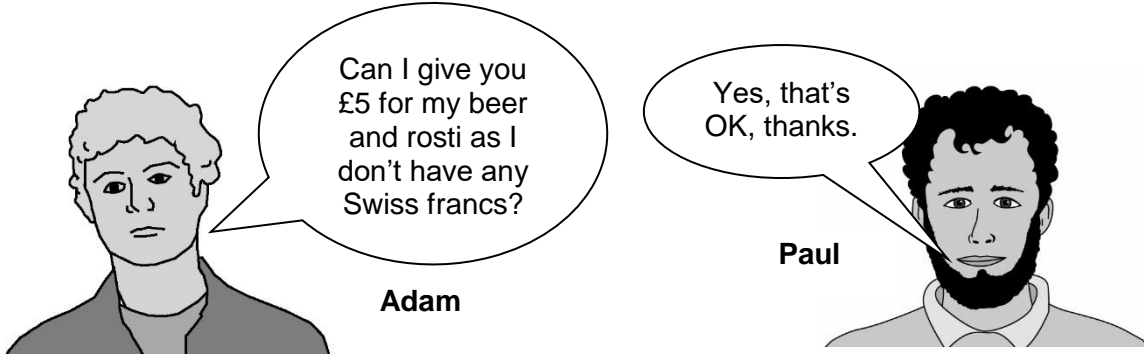
(2 marks)

Paul and his friends look at a menu in a café.

(ii) What is the range of prices on the menu?

(2 marks)

Adam wants to give Paul £5.



(c) Show who is losing out.

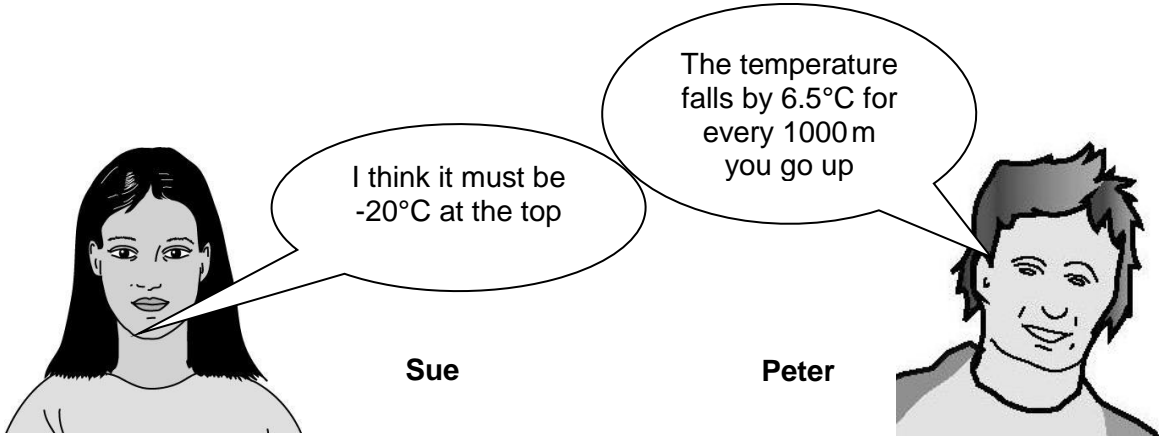
(4 marks)

The top of the mountain is 4478m above sea level and covered in snow.

The café is 3089m above sea level.

A thermometer shows that it is 6°C outside the cafe.

Sue wonders what the temperature is on top of the mountain.



(d) Explain why Sue is wrong.

(4 marks)

Examiner use only (Q3)

Checking (2 marks)

Examiner use only (Checking)

Total marks

Examiner use only (Total)

END OF TASK C



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OXFORD CAMBRIDGE AND RSA EXAMINATIONS

**OCR FUNCTIONAL SKILLS QUALIFICATION IN
MATHEMATICS AT LEVEL 1**

The maximum mark for this paper is [60]

This document consists of 16 printed pages

[Turn over

**OCR Level 1 Functional Skills Maths
Mark Scheme Referencing**

Our ref	Coverage and Range
N1	Understand and use whole numbers and understand negative numbers in practical contexts
N2	Add, subtract, multiply and divide whole numbers using a range of strategies
N3	Understand and use equivalences between common fractions, decimals and percentages
N4	Add and subtract decimals up to two decimal places
N5	Solve simple problems involving ratio, where one number is a multiple of the other
N6	Use simple formulae expressed in words for one-or-two-step operations
G1	Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature
G2	Convert units of measure in the same system
G3	Work out areas and perimeters in practical situations
G4	Construct geometric diagrams, models and shapes
S1	Extract and interpret information from tables, diagrams, charts and graphs
S2	Collect and record discrete data and organise and represent information in different ways
S3	Find mean and range
S4	Use data to assess the likelihood of an outcome

Process Skills/Skill Standards

R = Representing

A = Analysing

I = Interpreting

Representing	Our Ref
Understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine.	R1
Identify and obtain necessary information to tackle the problem	R2
Select mathematics in an organised way to find solutions	R3
Analysing	
Apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes.	A1
Use appropriate checking procedures at each stage.	A2
Interpreting	
Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations.	I1

FS Maths L1 January 2013 Marking Guidance

Task 1 – Happy Hour

Part	Process	Award	On evidence of	Notes	Skill Standards		
					R	A	I
a	Find distance driven on 1 gallon of diesel	1	45	Ignore any further work or wrong units eg km or gallons	R2		
b	Find the cost per gallon	3	3 £5.21 or £5.22 oe or 2 figs 521(55) (no units or incorrect units) or 1 115.9 seen	oe = pence with p following 1 for 25.7 or 8 (from $115.9 \div 4.5$ and implied use of 115.9)	R2	A1	I1
c	Find capacity of tank	3	2 49.5 to 50.5 or 54 (litres) or 1 500 seen or 5.5 to 6 or 11 to 11.2 (gallons) or \div <i>their</i> (a) or amount of fuel for 250 miles x 2 and 1 Well set out working	$500 \div 45 \times 4.5 = \mathbf{50}$ $500 \div 4.5 = 11.11\dots$ $11 \times 4.5 = 49.5$	R3	A1	I1
d	Find fuel used to travel to and from garage	4	3 (0).63 (litres) or 2 <i>their</i> $6.3 \div 10$ oe (eg $\div 20 \times 2$) or 1 10 (km) or 6.3 seen and 1 Well set out working	2 for 0.315×2 seen 1 for 0.315	R1 R3	A1	I1

Part	Process	Award	On evidence of	Notes	Skill Standards		
					R	A	I
e	Demonstrate that both may be correct Stage 1 find cost of trip Stage 2 find litres to save cost Stage 3 compare to tank capacity Stage 4 comment	7	<p>Getting to the garage</p> <p>2 <i>Their 69 to 74p or</i></p> <p>1 <i>Their number of litres from (d) x 115.9</i></p> <p>Saving</p> <p>2 <i>Their 35 to 37 litres or their 50p saved in half tank or</i></p> <p>1 <i>Their 73 ÷ 2 or their half tank x 2p</i></p> <p>Comparing</p> <p>2 Clear statement comparing cost of journey and amount saved and mentioning half tank or</p> <p>1 General statement about cost and or saving that contains no false assertions.</p> <p>and</p> <p>1 All units correct or Clear annotated working</p>		R1 R3	A1 A1	I1 I1 I1
	Checking	2	<p>2 A clear check of a calculation or</p> <p>1 Statement that an answer is reasonable, or 3 correct calculations throughout task or</p> <p>0 Fewer than 3 correct calculations or answers and no checks</p>	Correct means correct method and numerically correct		A2 A2	
	Total	20		Totals	7	7	6

Expected solution and evidence

(a) How far can Geoff drive on one gallon of diesel?

45

(b) What is the cost of one gallon of diesel, at the normal price?

115.9×4.5

521.55

£5.21 or £5.22 or 521p or 522p

(c) What is the capacity of his tank?

$250 \times 2 = 500$ miles

$250 \div 4.5 = 5.55555$ or 5.6 or 6

$500 \div 45 = 11.11111\dots$ gallons

$5.55555 \times 2 = 11.1111$ or 11 or 11.1 or 11.2 or 12

$11.111 \times 4.5 = 50$ litres

$11.11111 \times 4.5 = 50$ litres or 49.5 or 49.95 or 50.4 or 54

(d) How many litres of diesel does Geoff use when he drives from home to the garage and back?

10 km

$6.3 \div 10 = 0.63$ litres

(e) Who is right?

Cost to drive to garage and back $0.63 \times 115.9 = 73.017$ or 73p

He needs to save at least **73p** so must buy 36.5 litres or more

If he buys 37 litres he will save 74p

BUT he cannot put 36 litres in his tank. If he has half a tank, the maximum he can put in is 25 litres so Geoff will lose money.

Geoff can only save money if he has less than 13 litres in his tank

Task 2 – Loft Insulation

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
a(i)	Read ruler	1	120 or 12cm	12cm must have units 0 for 12 only	R2
a(ii)	Explain extra thickness	2	<p>1 Thickness Too thin or Less than 270 mm thick or it should be at least 270mm or <i>their</i> 150 less than recommended</p> <p>1 Economy Wasting money or losing heat or could save money or Could keep more heat in or make house warmer</p>	<p>If comment includes number condone minor errors</p> <p>Must be losing heat or wasting money</p>	R1 I1
b	Find area of loft	3	<p>3 180 m² or</p> <p>2 180 m or 180 or</p> <p>1 12 x 15</p>	180 with wrong units	R2 A1 R3

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
c(i)	Show cost of insulation for Snugglewrap	5	<p>Find number of rolls for one product.</p> <p>Area method</p> <p>1 (0).37 or 1.14 seen in calculation in metres oe</p> <p>1 Attempt area of a roll (<i>their</i> (0).37 or 1.14 x length of roll)</p> <p>1 Attempt number of rolls R. (<i>Their</i> $180 \div \textit{their}$ area of roll)</p> <p>OR</p> <p>Strips method</p> <p>1 15 000 or 12 000 seen in calculation with millimetres or (0).37 or 1.14 seen in calculation with metres</p> <p>1 Attempt strips across (<i>Their</i> length of loft \div length or width of roll - 5.3 - (N))</p> <p>1 Attempt number of rolls R (<i>Their</i> $N \times 3$ or 2.2..)</p> <p>Find cost of one product</p> <p>1 Round up <i>their</i> number of rolls to nearest integer</p> <p>1 Cost correctly calculated for <i>their</i> R</p>	<p>Valid methods for second and third marks</p> <p>Rounding may be at any point in calculation. If “guess” is integer do not award this mark.</p> <p>Cost correct (may be to nearest £) and include £.</p>	R3 3A1 I1

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
c(ii)	Find the best deal	3	<p>3 from.. Attempt second price consistent with <i>their</i> areas of a roll or C1 Hi-Loft is too thick or too expensive or C1 2 layers of Lofty are needed or C1 Compare <i>their</i> price with £740 or find cheapest</p>	<p>Part of method must be valid</p> <p>May be seen in working as x2</p>	3I1

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
d	Find time to save cost of their loft insulation and assumptions	4	<p>1 Attempt <i>their</i> cost ÷ 170 1 Correct number of years from <i>their</i> division Either 2 After number of years, explain clearly that the saving will take place. Or 1 Any “savings” statement based on their number of years 1 Round up number of years or 1 Possible differences because prices can vary etc</p>	<p>Correct answer implies 2 marks</p> <p>A sentence with <i>their</i> number of years stated and “saving” (paying off).</p>	R3 A1 2I1

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
	Checking	2	2 A clear check of a calculation or 1 Statement that an answer is reasonable, or 3 correct calculations throughout task or 0 Fewer than 3 correct calculations or answers and no checks		2A2
TOTAL		20		Totals	6 7 7

Expected solution and evidence

(b) Area = length x width
 $12 \times 15 = 180 \text{ m}^2$

(c) Method based on finding areas

Name	Width (m)	Length (m)	Area (m ²)	Number of rolls	Number of rolls rounded	Cost (from rounded up)	Cost (from raw number)	Cost (from rounded down)
HiLoft	0.37	4	1.48	121.62...	122	£1,217.56	£1,213.78	£1,207.58
Lofty	1.14	4	4.56	39.47...	79	£474.00	£473.68	£468.00
Snuggle	0.37	5.3	1.961	91.78...	92	£690.00	£688.42	£682.50

(c) Method based on finding strips of insulation.

Name	Width, w (mm)	Length (m)	$15000 \div w$ (N)	$12000 \div w$ (N)	Number of rolls	Number of rolls rounded	Cost (from rounded up)	Cost (from raw number)	Cost (from rounded down)
HiLoft	370	4	40.5...	32.43...	121.62...	122	£1,217.56	£1,213.78	£1,207.58
Lofty	1140	4	13.1...	10.5...	39.47...	79	£474.00	£473.68	£468.00
Snuggle	370	5.3	40.5...	32.43...	91.78...	92	£690.00	£688.42	£682.50

Snugglewrap provides minimum extra thickness.
 Jack is wrong, as this is more than £500.

OR Lofty needs two layers.
 Jack is correct, as this is less than £500.

OR Hi-Loft is too thick
 Jack is wrong, as this is more than £500.

(d) Number of years to make saving

Divide *their* cost by 170.

$$£690 \div 160 = 4.3125 \rightarrow 5 \text{ years}$$

$$£474 \div 160 = 2.9625 \rightarrow 3 \text{ years}$$

$$£480 \div 160 = 3$$

$$£1217.56 \div 160 = 7.60975 \rightarrow 8 \text{ years}$$

Assumptions

- Prices do or do not stay constant.
- Usage does or does not stay constant.

Task 3 – Holiday Money

	Process	Award	On evidence of	Notes	Skill Standards R A I
a(i)	Conversion	2	<p>2 1.55 or 1.5 (CHF)</p> <p>1 Attempt 155 ÷100</p>	Condone T&I for method eg 100 x 1.5 = 150, 100 x 1.51 etc. Must be right or more than 1 trial getting closer to 1.55.	R1 A1
a(ii)	Range of prices	2	<p>2 5.70 (CHF)</p> <p>1 (8.50 and 2.80) or (2.80 and 4.20) or (5(.00) and 8.50) or 1.4(0) or 3.5(0) seen</p>	Condone £ From range of prices for drinks or food	R2 I1
b	Calculate change from 50 CHF	6	<p>Find total cost</p> <p>3 (Correct total =) 42.8(0)</p> <p>2 All correct individual totals of 8.8(0), 11.5(0), 12.3(0), 10.2(0) or Attempt total for correct 8 items</p> <p>1 One correct individual total</p> <p>and</p> <p>Find change</p> <p>2</p> <p>1 7.20 or (50 – <i>their</i> 42.60) correct</p>	<p>50 – 42.6</p> <p>beer x 2, hot choc x 2, rosti, pizza apple strudel, plum tart (List, approx prices and +)</p> <p>May be Paul 11.5(0)</p> <p>If Paul only then 38.5(0)</p>	R1 R2 2A1 I1 R3

	Process	Award	On evidence of	Notes	Skill Standards R A I
			<p>1 Attempt 50 – <i>their</i> 42.80</p> <p>and</p> <p>Correct money conventions</p>	CHF and zeroes	
c	Convert CHF to £ OR £ to CHF	4	<p>3 <i>Their</i> 7.75 (7.5(0))CHF or <i>their</i> £5.68 (or 5.67 or 5.7(0) or 5.86 or 5.87)</p> <p>2 Attempt conversion of £5 or 8.80 CHF</p> <p>1 8.8(0) or <i>their</i> total for Adam from (b) identified.</p> <p>and</p> <p>1 Interpret <i>their</i> converted figures for £5 and 8.80 CHF to identify <i>their</i> Paul as loser.</p>	<p>Ft their conversion factor from (a) 7.50 from 1.5 CHF</p> <p>Eg Change 8.80 CHF = £4 and “Adam is losing out.” (1.05CHF or £0.68)</p> <p>Do not award if no attempt at conversion made.</p>	R3 A1 211

	Process	Award	On evidence of	Notes	Skill Standards R A I
d	Show temperature on top of Matterhorn is not as cold as -20°C	4	<p>1 Correct difference in height (condone r.o.t.) or temperature between café and mountain top</p> <p>2 Change difference to degrees or metres Correct conversion of <i>their</i> height or <i>their</i> temperature difference</p> <p>1 or Attempt correct method or correct conversion for any height or temperature</p> <p>1 Use <i>their</i> figures to predict temperature at that height (-3 or ro (7- height at that temperature (7089) and interpret <i>their</i> result</p>	<p>Award equivalent marks for 500m and fall of 3.25°</p> <p>Eg 26°C or 1389 or 2000 or 1500 (m)</p> <p><i>Their</i> 1.389 or 2 x 6.5 = <i>Their</i> 9(.0285) or 13 <i>Their</i> 26 ÷ 6.5 = 4000 Condone rounding or truncation of 1.389</p> <p>Not 1000m ≡ -6.5°C</p> <p>Must mention temperature or height difference. Eg Temp cannot be that low it is only 9 degrees colder Eg Mountain is not that much higher the difference is only 1389m Eg Mountain would be much higher to be that cold</p>	R3 A1 2I1

	Process	Award	On evidence of	Notes	Skill Standards R A I
	Checking	C2	<p>2 One clear check of any calculation that would contribute to a mark</p> <p>1 Statement that an answer is reasonable, or 3 correct calculations that would each contribute to a mark, throughout the task</p> <p>0 Fewer than 3 correct calculations and no checks</p>		2A2
	TOTAL	20		Totals	7R 7A 6I

Expected Solution and Evidence

- (a) (i) $155 \div 100 = 1.55$ CHF
(ii) Range of prices from menu = $8.50 - 2.80 = 5.70$ CHF

- (b) Change from 50 CHF note
Add all items ordered = 2 beers + 2 chocolates + rosti + pizza + apple strudel + plum tart
= $2 \times 3.80 + 2 \times 4.20 + 5 + 8.50 + 7.30 + 6$
= 42.80 CHF

NB 45.20 CHF comes from adding all items on menu and gets NO marks but allow f/t for calculating change
Change from 50 CHF = $50 - 42.60 = 7.40$ CHF

- (c) Adam's food = $3.8 + 5 = 8.8$ CHF
8.8 CHF converted to £ using calc gives value approx £5.68, so from chart allow £5.50 - £6
OR £5 converted to CHF using calc gives 7.75 CHF so from chart allow 7.5 – 8 CHF
This suggests that Paul is losing out.
OR This is a reasonable deal as £5.68 is not far off £5.

- (d) Height difference = $4478 - 3089 = 1389$ m
Try to calculate temp difference, using $1389 \div 1000 = 1.389$
Temp difference = $1.389 \times 6.5 = 9$ °C
Subtract 9°C from their temp of 6°C gives temp of -3 °C, showing that Sue is wrong
OR
Height difference = $4478 - 3089 = 1389$ m
This is less than 2000m so temp fall is less than $2 \times 6.5 = 13$ °C
 $6 - 13 = -7$ so it cannot be as cold as -20 .
OR
This is temp difference of 26. $26 \div 6.5 = 4$, so would need height difference of 4000m, so not possible