

**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
<b>TASK A</b>		
	/	<b>/20</b>
	/	
	/	
	/	
	/	
<b>TASK B</b>		
	/	<b>/20</b>
	/	
	/	
	/	
	/	
<b>TASK C</b>		
	/	<b>/20</b>
	/	
	/	
	/	
	/	
<b>Total</b>	<b>/60</b>	

**This document consists of 28 pages. Any blank pages are indicated.**

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## RESOURCE DOCUMENTS

The Resource Documents on pages 5, 7, 9, 11 and 13 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, 9, 11 and 13 along the perforated strip before removing from the task and answer booklet.

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**TASK A – BEARS****RESOURCE DOCUMENT 1**

These are the UK delivery options that Barney offers his customers:

<b>UK Delivery Table - Summary</b>		
<b>Service</b>	<b>Postage cost per order</b>	<b>Delivery Time</b>
Standard	Free	Up to 7 working days
Quick	+ £2.95	1-3 working days
Express	+ £5.95	Next working day (for orders placed before 10.00am)
Saturday Express	+ £7.95	Saturday delivery (for orders placed before 10.00am Friday)

A working day is Monday to Friday (excluding weekends and UK bank holidays)  
No more than 10 bears per order

Barney can buy boxes at these prices:

<b>Business Boxes</b>					
	<b>Boxes per pack</b>	<b>Price per pack</b>			
<b>Size</b>		<b>1 – 4 packs</b>	<b>5 – 19 packs</b>	<b>20 – 39 packs</b>	<b>40+ packs</b>
152 x 152 x 152 mm	80	£22.09	£17.01	£11.71	£9.06
191 x 125 x 125 mm	70	£33.26	£27.94	£22.28	£19.96
203 x 203 x 203 mm	50	£22.20	£17.09	£12.21	£11.32
225 x 155 x 105 mm	50	£15.16	£12.43	£9.85	£6.82
229 x 152 x 152 mm	45	£13.41	£11.26	£9.25	£7.11
254 x 203 x 152 mm	40	£18.75	£14.44	£10.50	£7.50
254 x 203 x 203 mm	40	£19.05	£14.86	£11.05	£10.10
300 x 165 x 58 mm	50	£27.09	£21.94	£16.80	£14.09
305 x 229 x 76 mm	35	£22.64	£18.11	£13.58	£11.32
305 x 229 x 152 mm	40	£16.31	£13.87	£11.23	£8.42
305 x 229 x 229 mm	30	£13.12	£11.41	£9.84	£6.82
381 x 248 x 127 mm	35	£21.73	£16.73	£11.52	£8.69

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**TASK A – BEARS**

Barney can buy plastic postal sacks at these prices:

<b>Plastic Postal Sacks – save ££££s with our quantity discounts!!!!</b>				
Width x Length inches	Number in pack	Cost per pack		
		1 or 2 packs	3 or 4 packs	5+ packs
7 x 9	100	£4.35	£3.92	£3.70
7 x 9	1000	£33.75	£30.38	£28.69
9 x 12	100	£5.65	£5.09	£4.80
9 x 12	500	£22.50	£20.25	£19.13
10 x 12	100	£6.35	£5.72	£5.40
10 x 12	500	£25.35	£22.82	£21.55
10 x 14	100	£6.55	£5.90	£5.57
10 x 14	1000	£52.50	£47.25	£44.63
12 x 14	100	£7.85	£7.07	£6.67
12 x 14	1000	£62.50	£56.25	£53.13
13 x 17	100	£8.75	£7.88	£7.44
13 x 17	1000	£69.90	£62.91	£59.42

**Conversions**

1 cm = 0.39 inches

1 inch = 2.54 cm

1 foot = 30.48 cm

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**TASK B – FLYING BAGS****RESOURCE DOCUMENT 1****Airline hand baggage rules**

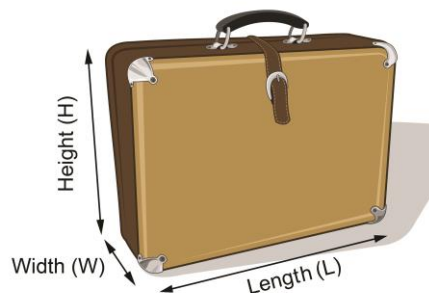
The following are guidelines.

<b>Airline</b>	<b>Maximum size</b>
Air France	55 x 35 x 25 cm
British Airways	56 x 45 x 25 cm
Easyjet	55 x 40 x 20 cm
Emirates	55 x 38 x 20 cm
Flybe	50 x 35 x 23 cm
Lufthansa	55 x 40 x 20 cm
Monarch	56 x 45 x 25 cm
Ryanair	55 x 40 x 20 cm
United Airlines	56 x 35 x 23 cm
Virgin Atlantic	56 x 36 x 23 cm

**\*Linear Length**

American Airlines	114 cm
Continental	115 cm
Iberia	115 cm
Qantas	115 cm

\* Linear Length =  
Length + Height + Width (L + H + W)  
of the case or bag and must  
include all side pockets etc.



**Note:** 1 inch = 2.54 cm  
1 litre = 1000 cm<sup>3</sup>

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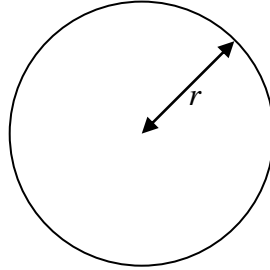
## TASK B – FLYING BAGS

### Areas and volumes

Take  $\pi$  as 3.1 or use the value on your calculator.

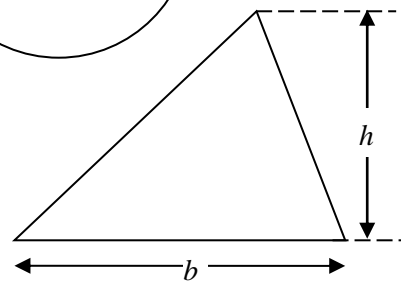
Area of a circle

$$= \pi r^2$$



Area of a triangle

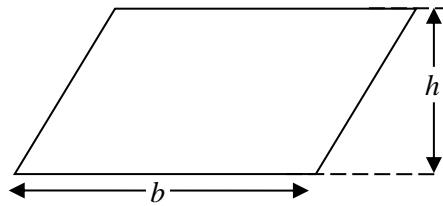
$$= \frac{1}{2} bh$$



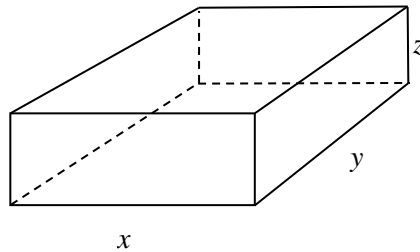
( $h$  is perpendicular height)

Area of a parallelogram

$$= bh$$



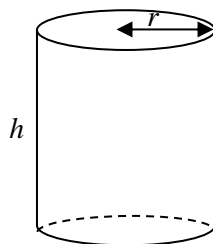
Cuboid



$$\text{Volume} = xyz$$

$$\text{Surface area} = 2xy + 2zy + 2yz$$

Cylinder



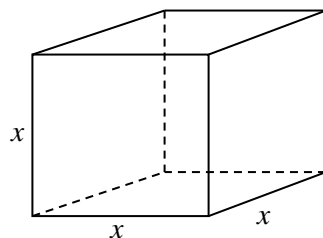
$$\text{Volume} = \pi r^2 h$$

$$\text{Area of curved surface} = 2\pi r h$$

$$\text{Area of each end} = \pi r^2$$

$$\text{Total surface area} = 2\pi r h + 2\pi r^2$$

Cube



$$\text{Volume} = x^3$$

$$\text{Surface area} = 6x^2$$

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**TASK C – CARS AND CHOICES****RESOURCE DOCUMENT 1**

Sally's readings from her milometer.

<b>Date</b>	<b>Reading</b>	<b>Date</b>	<b>Reading</b>
1 <sup>st</sup> Mar 2008	15046	1 <sup>st</sup> Mar 2009	27846
1 <sup>st</sup> Apr 2008	16266	1 <sup>st</sup> Apr 2009	28866
1 <sup>st</sup> May 2008	17220	1 <sup>st</sup> May 2009	29864
1 <sup>st</sup> June 2008	18100	1 <sup>st</sup> June 2009	30764
1 <sup>st</sup> July 2008	19300	1 <sup>st</sup> July 2009	32844
1 <sup>st</sup> Aug 2008	20120	1 <sup>st</sup> Aug 2009	34006
1 <sup>st</sup> Sept 2008	20925	1 <sup>st</sup> Sept 2009	34805
1 <sup>st</sup> Oct 2008	22126	1 <sup>st</sup> Oct 2009	36020
1 <sup>st</sup> Nov 2008	23256	1 <sup>st</sup> Nov 2009	37246
1 <sup>st</sup> Dec 2008	24456	1 <sup>st</sup> Dec 2009	38336
1 <sup>st</sup> Jan 2009	25520	1 <sup>st</sup> Jan 2010	38446
1 <sup>st</sup> Feb 2009	26746	1 <sup>st</sup> Feb 2010	39536

This is the data for two models of car.

	<b>Diesel Car</b>	<b>Hybrid Car</b>
<b>Price</b>	£16,419	£18,950
<b>Engine</b>	1364cc Diesel	1.8 litre Petrol and 60kW Electric Motor
<b>Transmission</b>	5 Speed Manual	Electric CVT
<b>0-62 MPH</b>	12 s	11.4 s
<b>Top speed</b>	109mph	112mph
<b>Rate of Fuel used: miles per gallon</b>	56.5	74.3
<b>CO<sub>2</sub> emissions</b>	132g/km	89g/km
<b>Car tax, per year</b>	£90	£0
<b>Servicing, per year</b>	£190	£210
<b>Tyres, per year</b>	£110	£110

$f$  is the number of litres of fuel used  
 $d$  is the number of miles driven in a year  
 $r$  is miles per gallon

$$f = \frac{d \times 4.5}{r}$$

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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 – BEARS****You will need Task A Resource Document 1**

Barney runs an internet business selling teddy bears.  
He sells two sizes of bear.

<p><b>Medium bear</b></p> <p>25.1 x 15 x 12.4 cm *</p> <p><b>£14.99</b></p> 		<p><b>Large bear</b></p> <p>40.9 x 26.7 x 17.8 cm *</p> <p><b>£23.99</b></p>
<p>* Length x width x depth</p>		

- Q1 (a)** Ellen decides to order two bears, one of each size. She needs them to be delivered within three working days. She uses the delivery table in the Resource Booklet to find out the postage cost.

What is the least that Ellen will have to pay in total?

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**(2 marks)**

- (b)** On Friday 23 July at 9.30 am, Annie places an order for one large bear. She wants the bear delivered as soon as possible.

- (i)** What is the earliest date on which the bear could be delivered?

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**(1 mark)**

(ii) What will be the total Annie has to pay to get the bear delivered by Monday 26 July?

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**(2 marks)**

(c) Barney packs the bears into cardboard boxes.

(i) What size box would Barney need to buy for a medium bear?

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**(2 marks)**

(ii) Barney wants to buy 1000 boxes for medium bears.

How much will it cost per box?

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**(3 marks)**

- (d) Barney thinks it will be cheaper to pack the medium bears into plastic postal sacks.

To be sure that a bear will fit into the sack, Barney estimates that the sack needs to be twice the width of the bear and 25% longer than the bear.

Is Barney right in thinking that plastic sacks are cheaper?

Explain all your working.

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**(8 marks)**

Examiner use only (Q1)

**Checking (2 marks)**

Examiner use only (Checking)

**Total marks**

Examiner use only (Total)

**END OF TASK A**

**TASK B – FLYING BAGS****You will need Task B Resource Document 1**

Anita plans a holiday.  
She will fly to her destination.

- Q1 (a)** Last year she had too much luggage and had to pay extra.  
According to the airline's rules:

***When baggage allowance is exceeded an excess baggage charge must be paid.***  
The excess baggage charge is 1% of the highest published one-way Adult Economy Fare for the journey per kilogram of excess weight.

The baggage allowance was 20 kg. Anita's bags weighed 30 kg.  
The highest published one-way Adult Economy Fare for her journey was £500.

- (i)** How much was Anita's excess baggage charge?

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**(2 marks)**

- (ii)** Anita flew with a budget airline. Her ticket cost a twentieth of the highest published one-way Adult Economy Fare!

How much was Anita's ticket?

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**(1 mark)**

**(b)** Many budget airlines allow free hand baggage.  
It must be light enough for a person to put into an overhead locker.

**(i)** What do you think is the heaviest weight an average person could easily lift into an overhead locker?

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**(1 mark)**

**(ii)** Anita measures her favourite bag.  
It is 22 inches by 15 inches by 9 inches.

Which airlines on the list in the Resource Booklet would allow her to take this as hand luggage?

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**(4 marks)**

Anita decides to buy a new bag, but does not want one which is too big. She sees this one online.

- **Type:** FLIGHT BAG
- **Handles:** Integrated adjustable shoulder strap with pad
- **Internal Features:** Interior zip pocket
- **External Features:** Front zip pocket & smart sleeve
- **Capacity:** 15 litres
- **Dimensions:** Height: 26 cm, Width: 38 cm, Depth: 15 cm



- (c) Anita does a calculation and finds that her value for the volume of the bag **does not** match the capacity quoted.

Do you agree with Anita?

Show all your calculations clearly, and explain any difference.

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(4 marks)

- (d) Anita has to choose between American Airlines and Flybe to get to her holiday destination.

Which airline allows the larger volume hand baggage?  
Make all your assumptions and working out clear.

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**(6 marks)**

Examiner  
use only  
(Q2)

**Checking (2 marks)**

Examiner  
use only  
(Checking)

**Q3 (plus checking) marks**

Examiner  
use only  
(Total)

**END OF TASK B**

**TASK C – CARS AND CHOICES**

You will need Task C Resource Document(s)

Sally drives a car with a diesel engine.  
This sign shows the price of fuel in pence.

Unleaded Litre	110.9
Diesel Litre	120.9

**Q3 (a)** How much does Sally pay for 20 litres of diesel?

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**(2 marks)**

**(b)** Sally records the reading on her car's milometer on the 1<sup>st</sup> of every month. This data is shown in the Resource Booklet.

How many miles in total did Sally drive in 2009?

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**(2 marks)**



- (c) Sally wants to know how much it cost her to drive her diesel car in 2009. First she estimates the amount of fuel used. She uses this formula.

$$f = \frac{d \times 4.5}{r}$$

$f$  is the number of litres of fuel used  
 $d$  is the number of miles driven in a year  
 $r$  is miles per gallon

- (i) How much fuel did Sally's car use?

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(2 marks)

- (ii) How much did this fuel cost?

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(1 mark)

Sally adds on the cost of servicing, tyres and car tax.

- (iii) What is the total cost?

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(2 marks)

Sally wants to buy a new car.  
She has seen a Hybrid car which uses both a petrol engine and an electric motor.

**(d)** How much would it have cost Sally to run the Hybrid car in 2009?

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**(5 marks)**

Sally will buy either the Hybrid car or a new diesel car. Sally plans to keep her new car for 4 years.

**(e)** Which car would you recommend? Give your reasons.

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**(4 marks)**

Examiner  
use only  
(Q3)

**Checking (2 marks)**

Examiner  
use only  
(Checking)

**Total marks**

Examiner  
use only  
(Total)

**END OF TASK C**

Task 1, page 17 Gund Teddy Bears, [www.bears4u.co.uk](http://www.bears4u.co.uk)  
Task 2, page 22 Flight Bag © Eagle Creek [www.zappos.com](http://www.zappos.com)

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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**

**LEVEL 2 FUNCTIONAL SKILLS MATHEMATICS**

**PRACTICE PAPER 4**

**Mark Scheme**

The maximum mark is 60

**OCR Level 2 Functional Skills Maths Referencing for Coverage and Range**

Our ref	Coverage and Range
N1	understand and use positive and negative numbers of any size in practical contexts
N2	carry out calculations with numbers of any size in practical contexts, to a given number of decimal places
N3	understand, use and calculate ratio and proportion, including problems involving scale
N4	understand and use equivalences between fractions, decimals and percentages
A1	understand and use simple formulae and equations involving one- or two-step operations
G1	recognise and use 2D representations of 3D objects
G2	find area, perimeter and volume of common shapes
G3	use, convert and calculate using metric and, where appropriate, imperial measures
S1	collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate
S2	use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using information and communication technology (ICT) where appropriate
S3	use statistical methods to investigate situations
S4	use probability to assess the likelihood of an outcome

N – Number  
 A – Algebra  
 G – Geometry  
 S - Statistics

<b>Representing</b>	<b>Our Ref</b>
Understand routine and non-routine problems in familiar and unfamiliar contexts and situations.	R1
Identify the situation or problems and identify the mathematical methods needed to solve them.	R2
Choose from a range of mathematics to find solutions.	R3
<b>Analysing</b>	
Apply a range of mathematics to find solutions.	A1
Use appropriate checking procedures and evaluate their effectiveness at each stage.	A2
<b>Interpreting</b>	
Interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations.	I1
Draw conclusions and provide mathematical justifications	I2

## FS Maths L2 July 2012 Marking Guidance

### Task 1 – Bears

Process	Award	on evidence of ...
<b>Part (a)</b>		
Calculating total cost  <b>[A]</b>	<b>2</b>	<p><b>2:</b> £38.98 + £2.95 = £41.93 (correct total cost) _____ or _____</p> <p><b>1:</b> £14.99 + £23.99 = (£)38.98 (subtotal for bears) seen or (£)2.95 (postal cost) seen as candidates' own sub-working £s not necessary or (£)44.88 (from 14.99+2.95+23.99+2.95)</p>
<b>Part (b)</b>		
(i) Identifying earliest date  <b>[B]</b>	<b>1</b>	<p><b>1:</b> (Saturday) 24<sup>th</sup> July</p>
(ii) Finding postal and total cost  <b>[C]</b>	<b>2</b>	<p><b>2:</b> £23.99 + £5.95 = £29.94 (correct cost) _____ or _____</p> <p><b>1:</b> (£)5.95 or (£)23.99 seen.</p>
<b>Part (c)</b>		
(i) Identifying the size of box required  <b>[D]</b>	<b>2</b>	<p><b>2:</b> 254 × 203 × 152 (mm) _____ or _____</p> <p><b>1:</b> 254 or 203 or 152 seen (may be implied by price e.g. (£)22.09 ⇒ 152 × 152 × 152)</p> <p><i>The size of box chosen by candidates follows through into part (ii)</i></p>
(ii) Calculating cost per box  <b>[E]</b>	<b>3</b>	<p><b>3:</b> £0.2625 or 26.25p or 26p or 27p www (i.e. correct money units needed) or</p> <p><b>2:</b> figs 2625 or 26 or 27 seen www _____ or _____</p> <p><b>1:</b> 1000 ÷ "40" = "25" (the number of packs) seen, ⇒ from price band chosen for pack – if clear.</p> <p><b>1:</b> "10.50*" ÷ "40" or equivalent unit cost calculation method (condone lack of correct money units) i.e. price per pack* ÷ boxes per pack * a number in the candidates' correct row.</p> <p><b>1:</b> £"0.2625" or "26.25p" or "26p" or "27p" (i.e. correct money units needed)</p>

Process	Award	on evidence of ...
<b>Part (d)</b>		
<b>Cost comparison</b>		Medium bear is $25.1 \times 15 \times 12.4$ (cm), processes [F] and [G] may be carried out in reverse order.
Finding size of sack <b>[F]</b>	<b>2</b>	<p>1: <math>25.1 \times 1.25 = 31.375</math> or equivalent required length</p> <p>1: <math>15 \times 2 = 30</math> or equivalent required width</p> <p style="text-align: center;"><b>or if zero scored</b> _____</p> <p>1: <math>15</math> or <math>12.4 \times 1.25 = (18.75 \text{ or } 15.5)</math> (condoning length/width/height confusion) <b>or a number clearly increased by 25%</b></p>
Converting metric to imperial dimensions <b>[G]</b>	<b>2</b>	<p><i>Full follow through on candidates' choice of sack size.</i></p> <p>1: "<math>30 \div 2.54</math> (or <math>\times 0.39</math>) = <math>11.8/11.7</math> (required length in inches, units not needed)</p> <p>1: "<math>31.375 \div 2.54</math> (or <math>\times 0.39</math>) = <math>12.35... / 12.23 ...</math> (required width in inches, units not needed)</p>
Choosing appropriate sack size <b>[H]</b>	<b>1</b>	<p>1: <math>12 \times 14</math> (allow full follow through on candidates' Imperial sack dimensions) (Statement of <math>12 \times 14</math> without evidence of processes [F] and [G] cannot gain credit for these.)</p>
Comparing cost of sacks and boxes <b>[I]</b>	<b>2</b>	<p>1: " (£)62.50 or 66.70" seen (for candidates' sack size – not asked for cheapest so <math>100 \times 10</math> or <math>1000</math>)</p> <p>1: Comparison with candidates' cost for boxes from [E] (comparing like with like)</p>
Making a decision as to the cheapest: sacks or boxes <b>[J]</b>	<b>1</b>	<p>Correct decision based on their comparison and answer to the original question – "Are sacks cheaper?" (Must be by comparing like with like – beware false comparisons.)</p>
Checking <b>[K]</b>	<b>2</b>	<p>2: Clear evidence of a formal checking procedure being carried out at least once (e.g. by reverse calculation or repeating the calculation providing this is clearly a genuine check as opposed to a mere copying exercise).</p> <p>1: Clear recognition and relevant statement at any appropriate point that a particular answer to a calculation is appropriate/expected or inappropriate/not expected</p> <p style="text-align: center;"><b>or</b> _____</p> <p>Two or more calculations relevant to the task correctly performed, together with the absence of idiosyncratic part answers in the course of the task – these will usually be such that they are clearly at least two orders of magnitude different from the real-life quantity or measure. <i>Possible examples for this task might be prices/costs in £1000s of pounds, or Imperial dimensions of several hundred inches.</i></p> <p>0: No evidence of checking or consideration of reasonableness of answers – including bland statements to the effect that calculations were checked without any relevant evidence.</p>



## Task 2 – Flying Bags

Process	Max.	Award ... on evidence of ...	R	A	I
<b>Part (a)</b>					
(i) Calculating excess baggage charge [A]	2	2: (£)50 1: "number" ÷ 100 or equivalent 1: (£)5 seen (i.e. 1%)	R2	A1	
(ii) Calculating 1/20 of £500 [B]	1	1: £25			I1
<b>Part (b)</b>					
(i) Estimating a comfortable bag weight to lift into locker [C]	1	1: (5 to 35) kg (must have the unit)	R1		
(ii) Changing Imperial bag dimensions into metric [D]	2	2: 55-56 38-39 22-23 seen 1 for each maximum of 2	R2	A1	
Finding airlines with allowance greater than above [E]	2	1: Monarch 1: British Airways  Follow through on "dimensions" including linear length  If only 1 or 2 are listed which are correct award 1 or 2. e.g. 1 correct + 1 wrong = 1, but more than 1 wrong gets zero 2 correct + 1 wrong = 1, more than 1 wrong = zero	R2	A1	
<b>Part (c)</b>					
Calculating volume of Anita's bag. [F]	2	1: 26 x 38 x 15 seen or implied 1: 14820 (cm <sup>3</sup> )	R2		I1
Comparing calculated volume with stated volume in litres. [G]	2	1: Comparing litres with cm <sup>3</sup> 15000 with "14820" or Comparing cm <sup>3</sup> with litres 15 with "14.82"  1: Sensible reason fitting "comparison" such as bag not a true cuboid, pockets, rounding etc.			I1 I2

Process	Max.	Award ... on evidence of ...	R	A	I
<b>Part (d)</b>					
Comparing size (volume) of bags allowed by American Airlines with Flybe  <b>[H]</b>	<b>6</b>	Two possible routes (X) by volume and adjusting/investigating the dimensions of American Airlines using their given linear length, or, (Y) comparing the latter's linear length with the calculated Flybe linear length. The latter approach has limited credit.  (Allow full credit for the clear argument along lines that Volume of (a + x) by (b + y) by (c + z) is greater than a by b by c.)	R2	A1  A1	I1  I2
<b>X</b>					
Finding maximum volume of American Airlines allowed bag	<b>4</b>	<b>1:</b> Three numbers seen for dimensions of case that sum to x (where $108 \leq x \leq 114$ ) <b>1:</b> Attempt to calculate a volume using these three figures <b>2:</b> Correctly calculated volume $\geq 40250$ or <b>1:</b> correctly calculated volume less than this			
Finding volume of Flybe allowed bag	<b>1</b>	<b>1:</b> 50 x 35 x 23 or figs 40250			
Comparing the two volumes	<b>1</b>	<b>1:</b> Comparison made with reference to original question and based on candidates' figures.			
<b>Or</b>	<b>or</b>	<b>or</b>			
<b>Y</b>					
Finding the linear length of a allowed bag on Flybe	<b>2</b>	<b>1:</b> 50 + 35 + 23 (see note above) <b>1:</b> = 108(above make can be implied)			
Comparing the linear lengths of the two permitted bag sizes	<b>1</b>	<b>1:</b> Comparison made with reference to original question and based on candidates' figures.			
Evidence of checking <b>[I]</b>	<b>2</b>	<b>2:</b> Clear evidence of a checking procedure being applied <b>1:</b> Any recognition that answers are appropriate/expected or inappropriate/not expected or no obvious errors (3 or more correct calculation or part calculations) <b>0:</b> Obvious incorrect answers or no evidence of checking or considering appropriateness of answer		A2  A2	
			<b>SR=4</b>	<b>6R</b>	<b>7A</b>
					<b>7I</b>

### Task 3 – Cars and Choices

Process	Max.	Award ... on evidence of ...	Notes
<b>Part (a)</b>			
Calculating the cost of diesel [A]	2	2: £24.18 or 2418p seen 1: 120.9 × 20 or figs 2418 or £22.18 seen	
<b>Part (b)</b>		<i>Allow full follow through for annual mileage throughout the rest of the task.</i>	
Calculating annual mileage in 2009. [B]	2	2: 12926 1: sight of 38446 - number or number - 25520 or 12816	
<b>Part (c)</b>			
i Using given formula to calculate annual diesel consumption. [C]	2	2: (1020 to 1030) www – follow through on mileage ("12926" × 0.0796 ...) or equivalent 1: Two or more of [these] seen or implied being used in formula: <u>["12926"] × [4.5]</u> <u>[56.5]</u> (2: all 3 correct)	A1, G3
ii Calculating the annual cost of diesel. [D]	1	1: 'diesel used' × 120.9 (between £1200 and £1300)	
iii Total Cost [E]	2	2: 'diesel cost' + (110 + 190 + 90) / (390) (£1634.67/£1624.40) (the + 390 might be implied) 1: One of the costs missing or 210 + 110 (hybrid) seen	

Process	Max.	Award ... on evidence of ...	Notes
<b>Part (d)</b>			
Calculating the hybrid cost.  [F]	5	<p>5: £1188.20 or £1180.60 www _____ or _____</p> <p>1: sight of petrol used (776.2 to 783) allow follow through iff clear.</p> <p>1: sight of cost of petrol (£)868.20 or (£)860.60 or "782" x figs. 1109</p> <p>1: sight of tyres cost (£)110</p> <p>1: sight of servicing cost (£)210</p> <p>Above 2: ⇒ (£)320</p> <p>1: 'petrol cost' + 'tyre cost' + 'servicing cost' iff origin clear. Condone inclusion of purchase price.</p> <p>_____ all _____</p> <p>If incorrect money notation -1 on their final answer.</p>	S2
<b>Part(e)</b>			
Recommending between diesel and hybrid based on data given and calculated.  [G]	4	<p>4: Statement based on above calculations x4 and difference in price of cars _____ or _____</p> <p>2: Statement based on above calculations and difference in price of cars ( no "x 4") _____ or _____</p> <p>1: Statement based on above calculations _____ or _____</p> <p>1: Statement based on difference in price of cars (£2531). _____ or _____</p> <p>2: Sight of calculations over 4 years but no statement (price of cars not necessary) but +1 if statement given _____ or _____</p> <p>3: ½ each for qualitative statements such as below or equivalent (round up maximum of (3) e.g. Hybrid is less tax better acceleration less CO<sub>2</sub> better fuel consumption cheaper fuel Diesel is cheaper service cheaper price</p>	11,12

Process	Max.	Award ... on evidence of ...	Notes
Checking calculations or considering feasibility/viability of answers.  <p style="text-align: center;"><b>[H]</b></p>		<p><b>2:</b> Clear evidence of a checking procedure being carried out at any appropriate point in the task.</p> <p><b>1:</b> Clear recognition and relevant statement at any appropriate point that a particular answer to a calculation is appropriate/expected or inappropriate/not expected</p> <p><b>or</b></p> <p>no idiosyncratic part answers in the course of the task.</p> <p><b>0:</b> No evidence of checking or consideration of reasonableness of answers – including bland statements to the effect that calculations were checked without any relevant evidence</p>	<p><b>A2</b></p>