

ADA PINPOINT PACKS

0_to_34_Percent_Pinpoint_AI_Pack

Made for Grade1_Paper3

AO1,2_and_3

ALL_Strands

Calc_Only

Created by A.D.A:

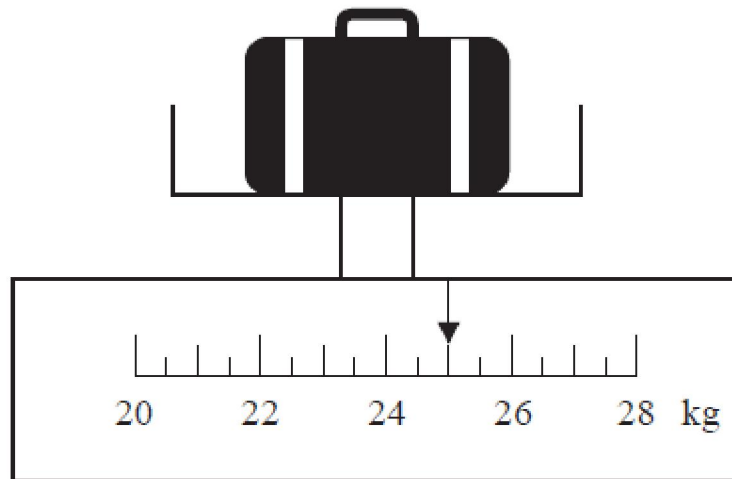
Pinpoints Automatic Differentiation Algorithmn

Designed and Programmed by

Tom Quilter, Anne Mcateer + Jon Hargreaves
... All maths teachers.

Question 1 (AO1): 94% of students got this right

7. Keith is going to catch a plane.
He weighs his bag on some scales.



- (a) Write down the weight shown on the scales.

Question 2 (AO1): 89% of students got this right

2. Nathan thinks of a number.
He doubles the number.
He adds 5

His answer is 17

What number does Nathan think of?

.....

(Total 3 marks)

Question 3 (AO2): 88% of students got this right

3. Angie is organising a party for 84 adults and 42 children.

At 8pm all the adults and all the children will sit down at tables for a meal.
6 people will sit at each table.

(a) Work out the number of seats and the number of tables Angie will need.

..... seats

..... tables
(3)

Question 4 (AO1): 86% of students got this right

8. Here are the first five terms of a sequence.

14 11 8 5 2

(i) Write down the next term of this sequence.

.....

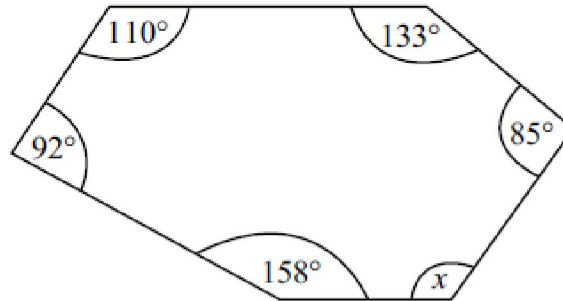
(ii) Explain how you got your answer.

.....

(Total for Question 8 is 2 marks)

Question 5 (AO1): 85% of students got this right

2. Here is a hexagon.



The angles of a hexagon add up to 720° .

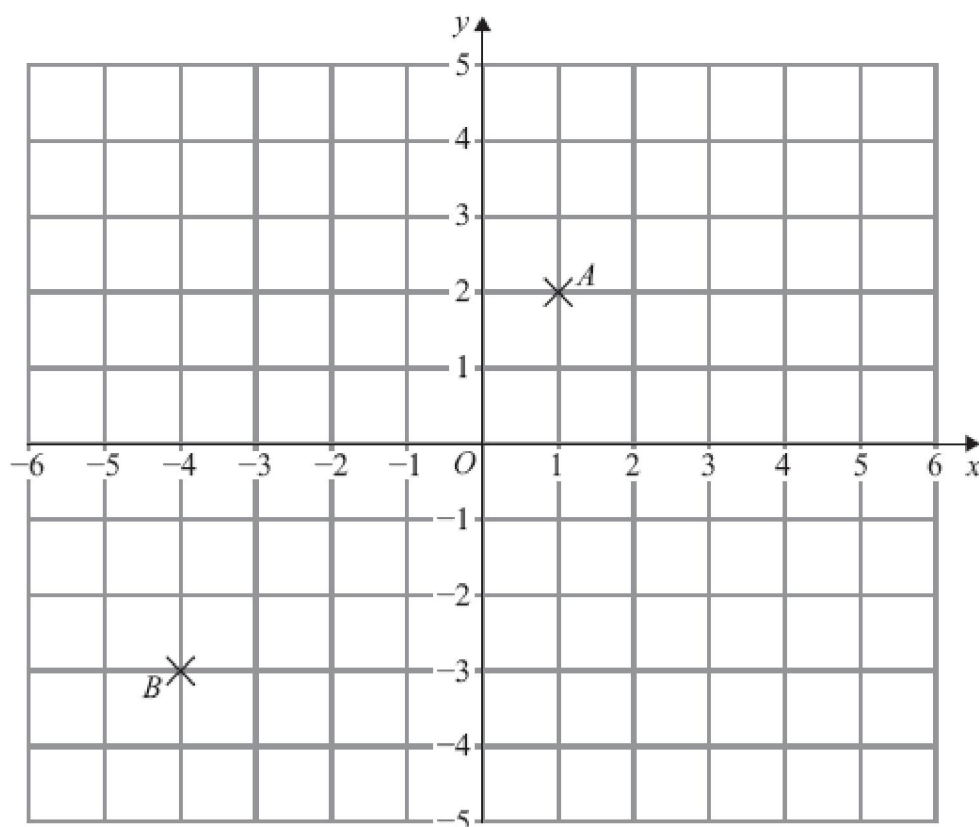
Work out the size of the angle marked x .

.....^o

(Total 2 marks)

Question 6 (AO1): 84% of students got this right

3.



(a) (i) Write down the coordinates of the point A.

(..... ,)

(ii) Write down the coordinates of the point B.

(..... ,)

(2)

(b) On the grid, plot the point (5, -1).
Label this point C.

(1)

(Total 3 mark)

Question 7 (AO1): 83% of students got this right

4. Here are the first five terms in a number sequence.

5 9 13 17 21

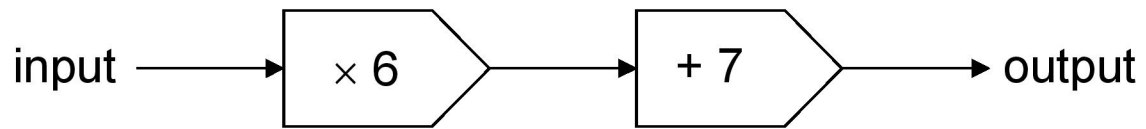
Find the 10th term in this number sequence.

.....

(Total 2 marks)

Question 8 (AO1): 82% of students got this right

9 Here is a number machine.

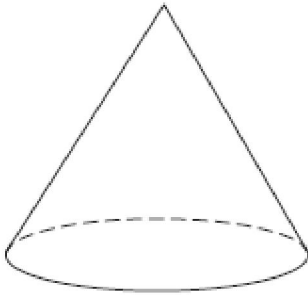


(a) Find the output when the input is 6

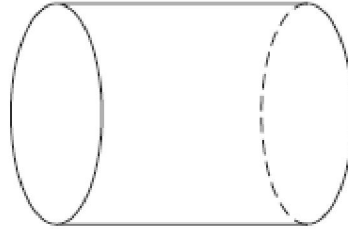
Question 9 (AO1): 82% of students got this right

11. Write down the name of each of these two 3-D shapes.

(i)



(ii)



Question 10 (AO1): 81% of students got this right

3. Write 40 out of 50 as a fraction.
Give your fraction in its simplest form.

.....

(Total 2 marks)

Question 11 (AO1): 81% of students got this right

5. (a) Work out 40% of 20.

.....

(2)

Question 12 (AO1): 79% of students got this right

7. Here is a solid prism made from centimetre cubes.

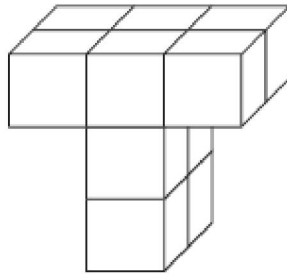
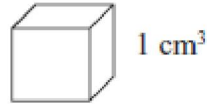


Diagram **NOT**
accurately drawn



Find the volume of the prism.

..... cm³

(Total 1 mark)

Question 13 (AO1): 78% of students got this right

- 15** There are 35 pens in a box.
15 of the pens are green.
The rest of the pens are red.

(a) What fraction of the pens in the box are red?

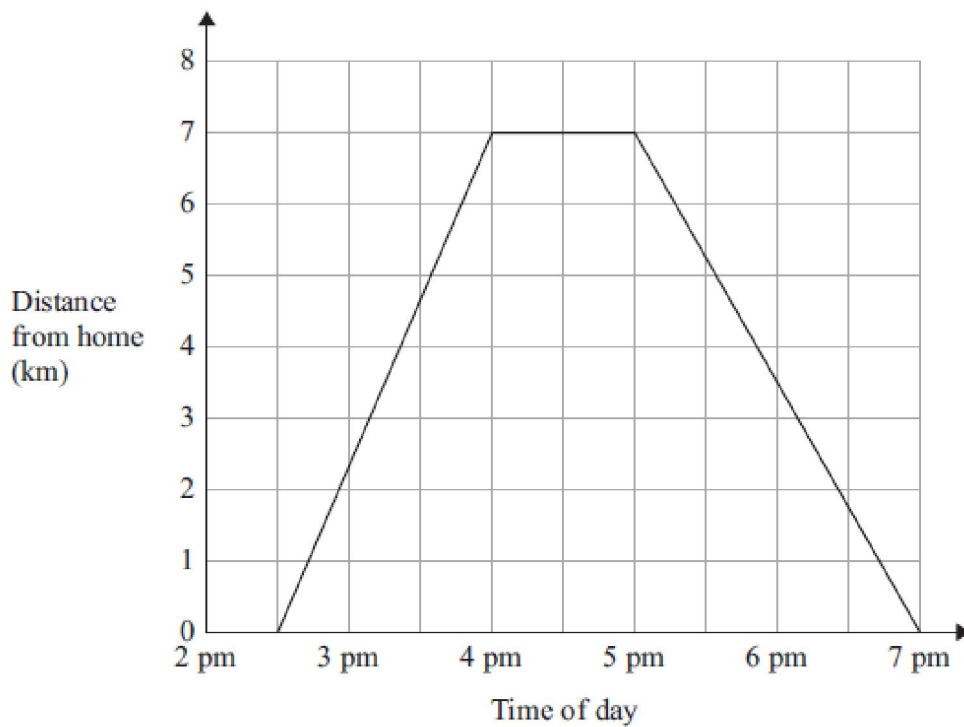
Question 14 (AO1): 77% of students got this right

15. Suha walked 7 km from her home.

She then had a rest.

Suha then walked home.

Here is Suha's travel graph.



- (a) What time did Suha leave home?
- (b) How long did Suha rest for?
- (c) What time did Suha start to walk home?
- (d) Work out the total time that Suha was away from home.

Question 15 (AO1): 76% of students got this right

2. These two triangles are congruent.

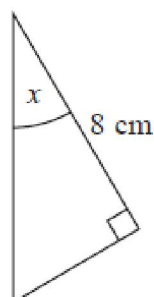
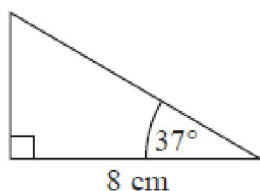


Diagram NOT
accurately drawn

- (a) Write down the size of the angle marked x .

.....°

(1)

These two quadrilaterals are congruent.

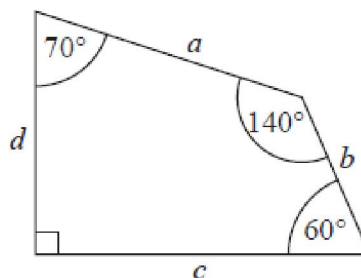
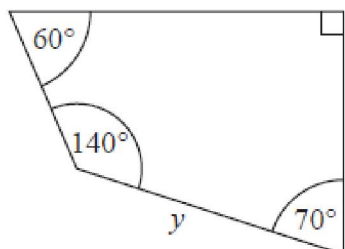


Diagram NOT
accurately drawn

Side y is equal to one of the sides, a or b or c or d .

- (b) Which side?

.....

(1)

(Total 2 mark)

Question 16 (AO2): 75% of students got this right

2. A film starts at 1830.
The film ends at 2050.

(a) How long does the film last?

.....
(2)

Jan watches this film and then catches a bus home.

The bus leaves the bus stop 18 minutes after the film ends.
The bus takes 24 minutes to get to Jan's home.

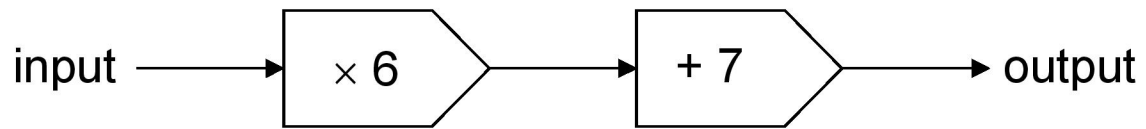
- (b) Will Jan be home before 2130?
You must show all your working.

(3)

(Total 5 marks)

Question 17 (AO1): 75% of students got this right

9 Here is a number machine.



(b) Find the output when the input is -4

Question 18 (AO1): 73% of students got this right

- 16** A sprinter runs a distance of 200 metres in 25 seconds.

Work out the average speed of the sprinter.

Question 19 (AO1): 73% of students got this right

9. On 1st June, Brian has £312 in his bank account.

On 5th June he puts £120 into his bank account.

On 10th June he puts £25 into his bank account.

This is how much Brian spends from his bank account from 1st June to 15th June.

Supermarket £42.40
Mobile phone bill £21.05
Grocery shop £24.30
Electricity bill £64.20
Online book purchase £18.32
Council tax £144.50
Clothes £84.20
Supermarket £51.35

On 16th June, Brian wants to know how much money there is in his bank account.

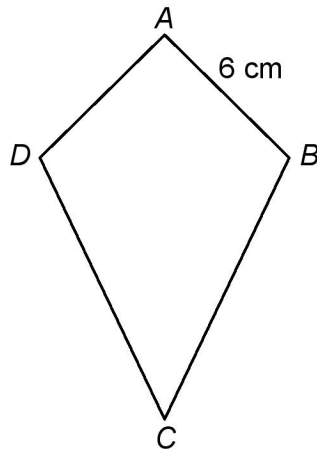
Work out how much money there is in his bank account.

Question 20 (AO1): 72% of students got this right

15 (a) Work out $\frac{4}{5}$ of 210 cm.

Question 21 (AO1): 71% of students got this right

- 19 The perimeter of kite $ABCD$ is 32 cm



Not drawn
accurately

The length of side AB is 6 cm
Work out the length of side CD .

Circle your answer.

[1 mark]

10 cm

8 cm

9 cm

21 cm

Question 22 (AO1): 71% of students got this right

3 Here is a list of fractions.

$$\frac{3}{9} \quad \frac{5}{15} \quad \frac{7}{21} \quad \frac{9}{30} \quad \frac{15}{45}$$

One of these fractions is **not** equivalent to $\frac{1}{3}$

Which fraction?

Question 23 (AO2): 70% of students got this right

- 4 Packs of batteries cost £3.85 each.
Ben has £50 to spend on batteries.

Ben buys as many packs of batteries as he can.
Work out how much change he should get from £50

.....

(Total for Question 4 is 3 marks)

Question 24 (AO1): 70% of students got this right

3 Write 0.21 as a fraction.

Question 25 (AO1): 69% of students got this right

8 In Rachel's survey, 2 out of 10 people like apples best.

(b) Write 2 out of 10 as a percentage.

Question 26 (AO3): 69% of students got this right

13 Here are the first three terms of a sequence.

32

26

20

Find the first two terms in the sequence that are less than zero.

Question 27 (AO1): 68% of students got this right

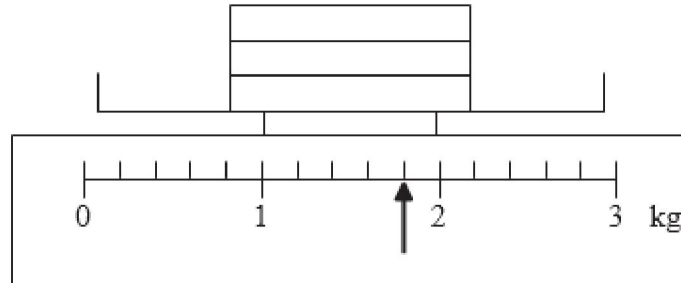
- 8 Here are the first five numbers in a sequence.

47 41 35 29 23

- (a) Find the first negative number in the sequence.

Question 28 (AO1): 67% of students got this right

4. The scale shows the total weight of 3 boxes.



Each box is the same weight.

Work out the weight of one box.

..... kg

(Total 3 mark)

Answers to Qn 1 (AO1): 94% of students got this right

Question		Working	Answer	Mark	Notes
7	(a)		25	1	B1 25 or 25.0

Answers to Qn 2 (AO1): 89% of students got this right

2.		$17 - 5 = 12$ $12 \div 2 =$ $2x + 5 = 17$ $2x = 17 - 5$	6	3	<p>M1 $17 \div 2 (= 8.5)$ or $17 - 5 (= 12)$ M1 for correct order of operations -5 then $\div 2$ A1 cao</p> <p>Alternative M1 for forming the equation $2x + 5 = 17$ M1 for attempt to subtract 5 from both sides or divide both sides by 2 as the first step A1 cao</p> <p>NB For solutions involving trial and improvement award 3 marks (B3) for the correct answer of 6 but 0 marks for method; embedded solutions get 2 marks as long as the equation or working is complete.</p>
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Answers to Qn 3 (AO2): 88% of students got this right

		3. (a)	126, 21	3	<p>B1 for 126 (seats)</p> <p>M1 for method identified to divide number of people by 6, e.g. “126” \div 6 or 84 \div 6 (= 14) or 42 \div 6 (=7)</p> <p>A1 for 21 (tables)</p>
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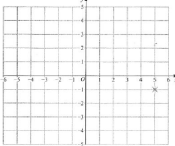
Answers to Qn 4 (AO1): 86% of students got this right

8(i)		-1	B1	cao
(ii)		explanation	C1	explanation, e.g. by subtracting 3

Answers to Qn 5 (AO1): 85% of students got this right

Question		Working	Answer	Mark	Notes
2.			142	2	<p>M1 for $720 - (110 + 92 + 158 + 85 + 133)$ or $720 - 578$</p> <p>A1 for 142 cao</p>

Answers to Qn 6 (AO1): 84% of students got this right

3.	(a)		(1, 2)	2	B1 (allow $(x = 1, y = 2)$)
	(i)				
	(ii)		(-4, -3)		B1 (allow $(x = -4, y = -3)$)
	(b)		plot(5, -1) on grid	1	B1 for plotting at (5, -1)
					

Answers to Qn 7 (AO1): 83% of students got this right

Question		Working	Answer	Mark	Notes
4.			41	2	M1 for $4n + 1$ seen or $4 \times 10 + 1$ or attempt to count on from 21 in 4s at least 3 times A1 cao
					Grade1_Paper3 and sample

Answers to Qn 8 (AO1): 82% of students got this right

Question	Working	Answer	Mark	Notes
9 (a)		43	B1	cao

Answers to Qn 9 (AO1): 82% of students got this right

Question		Working	Answer	Mark	Notes
11	(i)		cone	1	B1 for cone or alternative spellings only that sound like “cone”
	(ii)		cylinder	1	B1 for cylinder or alternative spellings only that sound like “cylinder”. Accept circular based prism

Answers to Qn 10 (AO1): 81% of students got this right

Question		Working	Answer	Mark	Notes
3			$\frac{4}{5}$	2	M1 for $\frac{40}{50}$ oe , A1 cao
Grade1_Paper3 and sample					

Answers to Qn 11 (AO1): 81% of students got this right

5.	(a)	$\frac{40}{100} \times 20$	8	2	M1 $\frac{40}{100} \times 20$ oe A1
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Answers to Qn 12 (AO1): 79% of students got this right

	7.	5×2	10	1	B1 cao
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Grade1_Paper3 and sample

Answers to Qn 14 (AO1): 77% of students got this right

Question		Working	Answer	Mark	Notes
15	(a)		2.30 pm	1	B1 cao
	(b)		1 hour	1	B1 for 1 hour or 60 minutes
	(c)		5 pm	1	B1 cao
	(d)		4.5	1	B1 for 4.5 hours oe

Answers to Qn 15 (AO1): 76% of students got this right

2.	(a)		37	1	B1 cao
	(b)		a	1	B1 cao

Answers to Qn 16 (AO2): 75% of students got this right

Question		Working	Answer	Mark	Notes
2.	(a)		2 hours 20 minutes	2	M1 for a full method to find the difference between the two times or 2.2 hours A1 2 hours and 20 minutes or 140 minutes
	(b)		No with supporting calculations	3	M1 for adding 18 and 24 to 20 50 A1 21 32 C1 (dep M1) correct conclusion from the comparison of their figure with 21 30 Or M1 for subtracting 18 and 24 from 21 30 A1 20 48 C1 (dep M1) correct conclusion from the comparison of their figure with 20 50 Or M1 for finding the time differences A1 for 40 minutes and 42 minutes C1 (dep M1) correct conclusion from the comparison of their time durations

Answers to Qn 17 (AO1): 75% of students got this right

Question	Working	Answer	Mark	Notes
9 (b)		-17	B1	cao

Grade1_Paper3 and sample

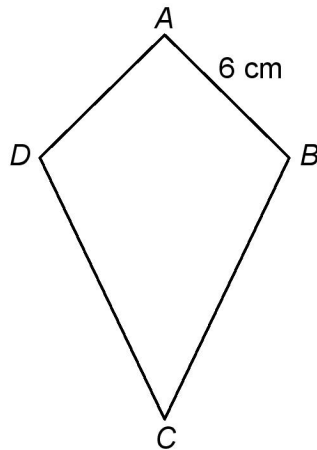
Answers to Qn 19 (AO1): 73% of students got this right

Question		Working	Answer	Mark	Notes
9		Balance = £312 + £145 = £457 Sum of items = £450.32 Final balance = £6.68	6.68	4	M1 adding the items (= 450.32) M1 312 + 120 + 25 M1 "312 + 120 + 25" - "450.32" A1 cao

Grade1_Paper3 and sample

Answers to Qn 21 (AO1): 71% of students got this right

- 19 The perimeter of kite $ABCD$ is 32 cm



Not drawn
accurately

The length of side AB is 6 cm
Work out the length of side CD .

Circle your answer.

[1 mark]

10 cm

8 cm

9 cm

21 cm

Answers to Qn 22 (AO1): 71% of students got this right

Question	Working	Answer	Mark	Notes
3		$\frac{9}{30}$	B1	cao

Answers to Qn 23 (AO2): 70% of students got this right

- 4 Packs of batteries cost £3.85 each.
Ben has £50 to spend on batteries.

Ben buys as many packs of batteries as he can.
Work out how much change he should get from £50

$$50 \div 3.85 = 12.987012...$$

$$12 \text{ packs} \times £3.85 = £46.20$$

$$£50 - £46.20 = £3.80$$

Grade1_Paper3 and sample

Grade1_Paper3 and sample

Answers to Qn 26 (AO3): 69% of students got this right

Paper 1MA1: 3F			
Question	Working	Answer	Notes
13		- 4 and -10	M1 for repeated subtraction of 6 oe A1 - 4 A1 -10

Answers to Qn 27 (AO1): 68% of students got this right

Question	Working	Answer	Mark	Notes
8 (a)		-1	M1 A1	for method to find the number, e.g. subtracting 6 repeatedly, 17, 11,... cao

Answers to Qn 28 (AO1): 67% of students got this right

4.			0.6	3	B1 for 1.8 seen (accept 1800) M1 for “1.8” \div 3 A1 for 0.6 oe
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