

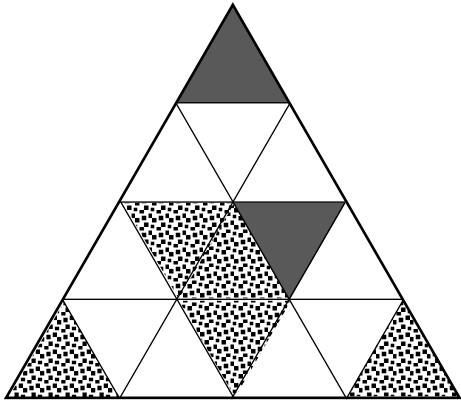
PiXL AQA Style Paper 1H (November 2016) Mark Scheme

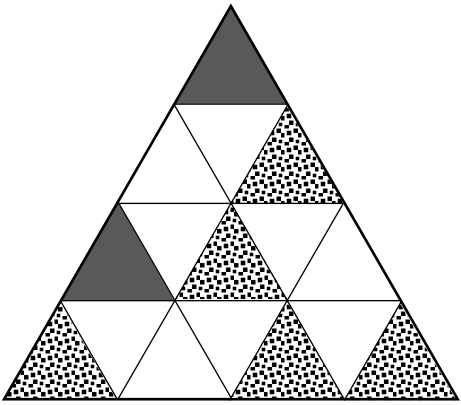
Q	Answer	Mark	Comments
1 (a)	2495 or 2945 or 4295 or 4925 or 9245 or 9425	B1	Any number made from all four digits with the 5 as the last digit.
1 (b)	249 or 294 or 429 or 492 or 924 or 942	B1	Any number made from the three digits 2, 4 and 9.
1 (c)	25 or 49	B1	
2 (a)	-7	B1	Minus sign must be present
2 (b)	13	B1	Condone -13. do not accept "-4 to +9" or similar.
2 (c)	New York	B1	
3 (a)	$7m-2n$	A1	Allow $-2n+7m$
3 (b)	x^9	A1	Do not allow just '9' on the answer line, must be given as a power.
3 (c)	$2y(3-y)$	M1	Correct factorisation with either 2 OR y removed as a factor.
		A1	Completely correct answer.

Q	Answer	Mark	Comments
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4 (a)	Equilateral	B1	
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4 (b)	$\frac{10}{16}$	B1	
	$\frac{5}{8}$	B1	

4 (c)		B1	
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4 (d)		B1	
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5 (a)	Kite	B1	
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5 (b)	$360 - (80 + 110 + 110) (=60)$	M1	oe. Allow arithmetic error(s) but must see 360° for total and one of 110° appear twice, 110° stated as size of unmarked angle, or 220°
	60	A1	No working implies M0 A0

Q	Answer	Mark	Comments
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6	Evidence of method.	M1	Sight of reasonable attempt at working, for example $7.84 + 20.25$ (with or without the square root sign).
	5.3	A1	Correct answer with no working can award M1 A1

7	Cost for three children is £43 – £28 (= £15). Attempts to find cost of one child (= £5)	M1	
	Cost of adult is $(£43 - 4 \times (\text{their } £5)) \div 2$ (= £11.50) or cost of adult is $(£28 - (\text{their } £5)) \div 2$ (= £11.50)	M1	
	16.50	A1	Values obtained previously for cost of adult and child must now be correct.
	Additional guidance		
	Correct answer based on trial and improvement scores M0 M0 A0		
	Correct answer with no working seen scores M0 M0 A0		
Most likely route is to find the cost of three children first, but there are numerous other correct methods for first M1 (including finding the cost of one adult first) – allow these if correct, awarding marks as above.			

8	$7 + 2 + 2$ (= 11)	M1	oe
	Large lorry holds 11 drums	A1	
	$120 \div 11$ 10.9090... or $120 \div 11$ is 10 remainder 10 or $11 \times 11 = 121$ or counts on from $11 \times 10 = 110$ up to 120 (or 121)	M1	
	11 lorries needed	A1	No need to state that last lorry will only have 10 drums for A1.

Q	Answer	Mark	Comments
9 (a)	Any three sections labelled Y	B1	
	Any five sections labelled Z	B1	
9 (b)	Evens	B1	
9 (c)	$\frac{8}{10}$ oe, or 80%, or 0.8	B2	B1 if one of numerator or denominator of unsimplified fraction is correct.
	Additional guidance		
	If $\frac{8}{10}$ is seen but later simplification contradicts this, give B1.		
	Do not allow 8 : 10. If seen, award B0		
"Likely" is B0			
10	$\frac{3}{8} = 37.5\%$ oe	M1	
	100 – 45 – "their 37.5"	M1	
	17.5%	A1	
11	$2x = 5$	M1	Or better
	$x = 2.5$	A1	
12	Cleo's Cabs = $5 + 0.8 \times 30$ (= 29) or $500 + 80 \times 30$ (= 2900)	M1	Do not allow $5 + 80 \times 30$
	Jake's Taxi's = 1×30 (= 30) or 100×30 (= 3000)	M1	Allow statement that Jake's Taxis is £30 without multiplication written down.
	Clear statement that $29 < 30$ oe and "Cleo's Cabs" box is ticked.	B1	All working must now be correct.
	Additional guidance		
	"Cleo's Cabs" box ticked with no working scores M0 M0 B0		
13	$450 \div (5 + 3 + 2)$	M1	
	45	A1	
	225, 135, 90	A1	Values must be written in order. All must appear. If fully correct but without working, award full marks anyway (ie M1 A1 A1).

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14	Alternative method 1 (65% of 1.2 million)		
	0.65 × 1.2 or $\frac{65}{100} \times 1.2$ oe (= 0.78) 0.65 × 1 200 000 or $\frac{65}{100} \times 1\,200\,000$ oe (= 780 000)	M1	
	Subtraction of (their 0.78)	M1	
	0.42 million or 420 000	A1	
	Alternative method 2 (35% of 1.2 million)		
	100 – 65 (=35)	M1	
	0.65 × 1.2 or $\frac{(\text{their } 35)}{100} \times 1.2$ oe (= 0.42) 0.65 × 1 200 000 or $\frac{(\text{their } 35)}{100} \times 1\,200\,000$ oe (= 420 000)	M1	
	0.42 million or 420 000	A1	
	Additional guidance		
	Penalise use of cumbersome “non-calculator” methods (for example, where 0.12 + 0.12 + 0.12 + 0.12 + 0.12 + 0.12 is seen) by deduction of one M1 mark (if subtraction and final answer are correct, could award M0 M1 A1).		

15 (a)	No	A1	Only give A1 with valid reason
	Because Pi is an irrational Or pi can't be given as a terminating decimal so the circumference won't be a terminating decimal.	B1	

15 (b)	8 × 4 = 32km	M1	Allow any method to reach 32km. Alternatively, allow method which converts the circumference of the wheel in to miles. 0.000137 will be seen in this case.
	32 × 1000 = 32000m	B1	Conversion of units to be the same, whether m or km.
	0.7 × π	M1	May be awarded in next step
	32000 / 0.7 π = 14551.3.....		Allow FT if incorrect circumference given previously.
	14550		Approximate answer given, allow also if rounded to 14500

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16	$x \times x \times (x + 5)$	B1	Any order permissible. Brackets may not be seen but must be seen to be expanded correctly in next step.
	$x^2 (x + 5)$	M1	If this step is missing, do not award M1
	Leading to $x^3 + 5x^2$	M1	

17	Scale factor 2 Or 2×5.3	M1	
	10.6	A1	

18	Alternative method 1		
	$140 \div 1.24 (= 112.90)$	M1	
	Camera costs £112.90 in Spain	M1	£ sign must be present.
	Cheaper in Spain	B1	Need to see comparison with £115
	Alternative method 2		
	$115 \times 1.24 (= 142.60)$	M1	Award if implied in later working out.
	Camera costs 142.60 Euros in England	M1	“Euros” (or €) must be present.
	Cheaper in Spain	B1	Need to see comparison with 140 Euros
	Additional guidance		
	“Spain” box ticked with no working scores M0 M0 B0		

19	Translation	B1	
	$\begin{pmatrix} 4 \\ -3 \end{pmatrix}$	B1	Both elements of vector must be correct Vector notation must be used – do not accept “4 to the right, 3 down”, etc.

20 (a)	$H=6n+4$	M1	1 mark for 6n 1 mark for +4
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20 (b)	$6 \times 12 + 4$	M1	Allow follow through from their 2 step formula.
	76	A1	

20 (c)	$6n+4>200$ $n> 32.6[6666]$	M1	1 mark for 6n 1 mark for +4
	33	A1	

Q	Answer	Mark	Comments
21 (a)	$(13-3)/(4-0)$	M1	
	2.5	A1	Do not allow 2.5x
21 (b)	$Y=2.5x +3$	A2	1 mark for each part.
21 (c)	Below	A1	Only allow with working
	$Y = 2.5x 50 +3$ $Y=128$	A1	
22 (a)	Intersection of P and S is 70	B1	Must be labelled on Venn diagram
	Production 15 OR sports 130	M1	Award M1 for either of these being correct, same method for both
	135 seen inside rectangle	A1	Fully correct diagram
22 (b)	200 and 70 identified	B1	Allow if seen indicated on diagram from (a)
	$7/20$, 0.35 or 35% oe	A1	May be given as fraction, decimal or percentage. Fraction need not be simplified for A1.