CONVERSION AND UNITS

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Higher Tier

1.

2		New York (supported)	P1 P1 C1	for changing between £ and $, eg 1.089×1.46 (= 1.58(9.)) or 2.83÷1.46 (= 1.93(8.)) or between litres and gallons, eg 1.089×3.785 (= 4.12(1.)) or 2.83÷3.785 (= 0.74(7.)) for a complete process to give values that can be used for comparison, eg "1.938..." ÷ 3.785 (= 0.51(2.)) **or** "1.589..."...× 3.785 (= 6.01(7.)) **or** 1.089 × 3.785 = (4.12(1.)) and 2.83 ÷ 1.46 (= 1.93(8.)) for New York and correct comparative values

Pearson Edexcel - Friday 6 November 2015 - Paper 2 (Calculator) Higher Tier

2.

4			49	3	M1 for converting calculations to common units (either system is acceptable) M1 for dividing their total capacity by the refuelling rate A1 48.9 - 49.1

Pearson Edexcel - Friday 6 November 2015 - Paper 2 (Calculator) Higher Tier

3.

6			40 000	2	M1 for 100 × 100 isolated or 4 × 100 × 100 A1 cao

Pearson Edexcel - Thursday 28 February 2013 - Paper 1 (Non-Calculator) Higher Tier

4.

6	(a)		8	1	B1 for 8 (.00)
	(b)		550	4	M1 for 600 – 200 (= 400) M1 for correct method to convert '$400' to £ M1 (dep on the previous M1) for 800 – '$400' in £s A1 for value in the range 540 –560 **OR** M1 for correct method to convert $600 **and** $200 to pounds M1 for '375'–'125' M1 (dep on the previous M1) 800 –'250' A1 for a value in the range 540-560 **OR** M1 for correct method to convert £800 to dollars M1 for '1280' + 200 – 600 M1 (dep on the previous M1) for attempt to convert '$880' back to £ A1 for value in the range 540 – 560

Pearson Edexcel - Monday 14 November 2011 - Paper 4 (Calculator) Higher Tier

5.

18		9 × 100	900	2	M1 for 10 × 10 (=100) **or** 9 × 100 **or** $1cm^2 = 100mm^2$ **or** 30 × 30 A1 cao

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier

6.

9	(a)	(5×5)×6	150 cm^2	4	M1 for attempt to find the area of one face (eg 5×5 or 25) M1 for 6 faces with an intention to add A1 cao B1 (indep) for cm^2 (with or without numerical answer) NB Do not accept any calculation which should lead to 125
	(b)	125 × 10 × 10 × 10 or 50 × 50 × 50	125 000	2	M1 125×10^3 (oe) or 50^3 (oe) A1 cao
	(c) (i)		86.5	1	B1 cao for 86.5
	(ii)		87.5	1	B1 for 87.5, or $87.4\dot{9}$ or 87.499… (min with dots) or 87.49 with some indication of recurrence

AQA GSCE – Thursday 8 June 2020 – Paper 3 (Calculator) Higher Tier

7.

18	**Alternative method 1**		
	30 × 0.45 or 13.5	M1	
	their $13.5 \div 2.54^2$	M1dep	oe eg $\frac{30 \times 0.45}{2.54^2}$
	2.09(2…) or 2.093 or 2.1	A1	SC1 5.31(4…) or 5.315 or 5.3
	Alternative method 2		
	$30 \div 2.54^2$ or 4.65(0…)	M1	oe
	their 4.65(0…) × 0.45	M1dep	oe eg $\frac{30}{2.54^2} \times 0.45$
	2.09(2…) or 2.093 or 2.1	A1	SC1 5.31(4…) or 5.315 or 5.3
	Alternative method 3		
	$0.45 \div 2.54^2$ or 0.0697(5…) or 0.0698	M1	oe
	their 0.0697(5…) × 30	M1dep	oe eg $\frac{0.45}{2.54^2} \times 30$
	2.09(2…) or 2.093 or 2.1	A1	SC1 5.31(4…) or 5.315 or 5.3
	Additional Guidance		
	SC1 when 2.54 is used and not 2.54^2		

AQA GSCE – Monday 24 May 2018 – Paper 1 (Non - Calculator) Higher Tier

8.

13	15 000 mm^3	B1	

AQA GSCE – Thursday 7 June 2018 – Paper 2 (Calculator) Higher Tier

9.

24	**Alternative method 1**		
	Any product of three valid dimensions that would give a volume < 34 000 or any product of three valid dimensions that would give a volume > 34 000	M1	eg 49.5 × 34.5 × 19.5 or 50.5 × 35.5 × 20.5 or 50 × 35 × 20 ignore any evaluations of products
	Any product of three valid dimensions that would give a volume < 34 000 and any product of three valid dimensions that would give a volume > 34 000	M1dep	eg 49.5 × 34.5 × 19.5 and 50.5 × 35.5 × 20.5 ignore any evaluations of products
	34 × 1000 or 34 000	M1	converts to cm^3
	their volume < 34 000 and their volume > 34 000 and 34 000 and ticks Cannot tell	A1	both volumes in cm^3 must see working for M3 answers for their volumes must be seen and be correct or rounded or truncated to at least 2 sf (unless 34 000 to 2 sf when must be to at least 3 sf)

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24 cont	**Alternative method 2**		
	Any product of three valid dimensions that would give a volume < 34 000 or any product of three valid dimensions that would give a volume > 34 000	M1	eg 49.5 × 34.5 × 19.5 or 50.5 × 35.5 × 20.5 or 50 × 35 × 20 ignore any evaluations of products
	Any product of three valid dimensions that would give a volume < 34 000 and any product of three valid dimensions that would give a volume > 34 000	M1dep	eg 49.5 × 34.5 × 19.5 and 50.5 × 35.5 × 20.5 ignore any evaluations of products
	one of their volumes ÷ 1000	M1dep	dep on first M1 converts to litres
	their volume < 34 and their volume > 34 and ticks Cannot tell	A1	both volumes in litres must see working for M3 answers for their volumes must be seen and be correct or rounded or truncated to at least 2 sf (unless 34 000 to 2 sf when must be to at least 3 sf)

Additional guidance continues on the next page

24 cont	**Additional Guidance**	
	There are an infinite number of sets of three valid dimensions Valid dimensions for 50 are [49.5, 50.5] for 35 are [34.5, 35.5] for 20 are [19.5, 20.5]	
	49.5 × 34.5 × 19.5 = 33 301.(…) or 33 000 or 33 300 49.6 × 34.6 × 19.6 = [33 636, 33 637] or 33 000 or 33 600 or 33 630 or 33 640 49.7 × 34.7 × 19.7 = 33 974.(…) or 33 000 or 33 900 or 33 970 49.8 × 34.8 × 19.8 = 34 314.(…) or 34 300 or 34 310 49.9 × 34.9 × 19.9 = 34 656.(…) or 34 600 or 34 700 or 34 650 or 34 660 50 × 35 × 20 = 35 000 50.1 × 35.1 × 20.1 = 35 346.(…) or 35 000 or 35 300 or 35 340 or 35 350 50.2 × 35.2 × 20.2 = 35 694.(…) or 35 000 or 36 000 or 35 600 or 35 700 or 35 690 50.3 × 35.3 × 20.3 = 36 044.(…) or 36 000 or 36 040 50.4 × 35.4 × 20.4 = [36 396, 36 397] or 36 000 or 36 300 or 36 400 or 36 390 50.5 × 35.5 × 20.5 = 36 751.(…) or 36 000 or 37 000 or 36 700 or 36 800 or 36 750	
	Three valid dimensions do not have to follow a pattern eg 49.6 × 35 × 20.4 (= 35 414.(…) or 35 000 or 35 400 or 35 410)	M1
	49.5 34.5 19.5 and 33 301 (answer implies multiplication signs)	M1
	49.5 34.5 19.5 (no answer so multiplication signs not implied)	M0
	33 301 but 49.5 34.5 19.5 not seen	M0
	Units do not have to be seen	

AQA GSCE – Tuesday 12 June 2018 – Paper 3 (Calculator) Higher Tier

10.

12	12.5 or $12\frac{1}{2}$ or $\frac{25}{2}$	B1	
	N/m^2 or newtons per square metre or Nm^{-2} or pascals or Pa	B1	oe
	Additional Guidance		
	m^2/N or P		B0

AQA GSCE – Thursday 6 November 2017 – Paper 2 (Calculator) Higher Tier

11.

4	kg/m^3	B1	
	Additional Guidance		

AQA GSCE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

12.

8	$\frac{y}{x} = \frac{5}{8}$ or $\frac{x}{y} = \frac{8}{5}$ or $8y = 5x$ or $\frac{5x}{8}$ or $0.625x$ or $(x =) \frac{8y}{5}$ or $(x =) 1.6y$ or $y = kx$ and $k = \frac{5}{8}$ or 8 ÷ 5 incorrectly evaluated and then $y = \frac{x}{\text{their incorrect evaluation}}$	M1	oe
	$y = \frac{5x}{8}$	A1	oe in form $y = f(x)$ or $f(x) = y$ eg $y = 0.625x$ or $y = \frac{x}{1.6}$ or $y = 5x \div 8$ or $y = x \div (8 \div 5)$ or $y = x \div 8 \times 5$
	Additional Guidance		
	$y = \frac{5}{8} \times x$ or $y = \frac{x}{8} \times 5$ or $y = x \div 1.6$		M1A1
	$y8 = x5$ or $(y =) \frac{x5}{8}$ or $(y =) x\frac{5}{8}$ or $y = \frac{5}{8}$ of x		M1A0
	Condone units for M1 only		
	Do not ignore further work eg $y = x \div (8 \div 5)$ then $y = x \div 8 \div 5$		M1A0

AQA GSCE – Thursday 8 June 2017 – Paper 2 (Calculator) Higher Tier

13.

2	$0.36\ cm^2$	B1	
	Additional Guidance		

AQA GSCE – Sample Paper 1 (Non - Calculator) Higher Tier

14.

3	$55\ 000\ cm^2$	B1	