Density and Pressure

Question	Answer	Mark	Mark scheme	Additional guidance
24 (a)	19	P1	for process to find area available at festival B, eg 700 × 2000 (=1 400 000)	
		P1	for finding the area available per person at one festival, eg 80 000 ÷ 425 (= 188.23..) **or** [area] ÷ 6750 (= 207.40..)	Accept either number rounded eg 207 or 188
		P1	for finding the area available per person at both festivals, eg 80 000 ÷ 425 (= 188.23..) **and** [area] ÷ 6750 (= 207.40..)	Accept both numbers rounded eg 207 and 188
		A1	answer in the range 18.7 to 19.5	
(b)	explanation	C1	for a valid statement relating to scale factor for area, **Acceptable examples** there are 10000 (cm^2) in 1 (m^2) because 1 m^2 is the same as 100 × 100 = 10000 cm^2 there are 2 side lengths that change from 1 m to 100 cm 300 ÷ 3 is 100 should use 100^2 300 ÷ 100 ÷ 100 = 0.03 3 × 100 × 100 = 30000 Because it's area not length. Because it's in m^2 not just metres He hasn't taken the squared sign into account **Not acceptable examples** there are 1000 cm in 1 m Callum is correct because ……. 300 ÷ 3 is 100 $3^2 = 9$ 300 × 300 = 90000 You have to square the number	

Question	Answer	Mark	Mark scheme	Additional guidance
25	2.7	M1 A1	for use of density = mass ÷ volume eg 27 ÷ 10 oe	

Question	Answer	Mark	Mark scheme	Additional guidance
25	1250	P1	for process to use area of base in the formula, eg $\frac{10000}{2\times4}$	
		A1	cao	

Question	Answer	Mark	Mark scheme	Additional guidance
26	2	P1	for process to find volume of tin eg 600 ÷ 0.6 (= 1000)	Award P1 for 600 ÷ 0.6 (= 1000) even if not used
		P1	for process to find volume of salt eg “1000” – 700 (= 300)	
		P1	for a process to find density of the salt eg 600 ÷ “300” **or** 0.6 × (“1000” ÷ “300”) **or** 600 ÷ [volume]	[volume] can be 700 or from a seen calculation using “1000”, “300”, 700 or identified as volume by label or formula or units
		A1	cao	A correct answer with no supportive working gets 0 marks

June 2023 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
27	648	M1 A1	for substitution into density formula eg 9×72 or $9 = \frac{m}{72}$ cao	

Question	Answer	Mark	Mark scheme	Additional guidance
28	7.96	M1	for method to find volume of cylinder, eg $\pi \times 3^2 \times 10$ (= 90π or 282.74…)	
		M1	for method to find density, eg 2250 ÷ "282.74…" **or** 2250 ÷ [volume]	[volume] is any value they clearly think is the volume of the cylinder but must come from a calculation and must not be 3 or 10
		A1	for answer in the range 7.95 to 7.96	

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Question	Answer	Mark	Mark scheme	Additional guidance
29	3 : 2	P1	for a process to find either volume eg 3^3 (= 27) or 4^3 (= 64)	
		P1	for showing density **A** = 81 ÷ "27" (= 3) or density **B** = 128 ÷ "64" (= 2)	
		A1	for 3 : 2 oe	Ignore units quoted

June 2020 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
29	96	M1	for a complete process to find the volume eg $6 \times 4 \times 10 \div 2$ (= 120)	
		M1	for a complete process, eg $(6 \times 4 \times 10 \div 2) \times 0.8$	
		A1	cao SC B1 for 192	