

## Estimation Past Paper Questions (MS)



Q1.

PAPER: 5MB2H 01				
Question	Working	Answer	Mark	Notes
	$\frac{90 \times 0.5}{5} = \frac{45}{5}$	8.9 – 9.5	2	M1 for at least two of 90, 0.5 and 5 A1 for 8.9 – 9.5

Q2.

Question	Answer	Mark	Mark scheme	Additional guidance
	4550 to 4800	M1  M1  A1	for rounding at least two figures to 800, 50, 300 or 290 (which could be evidenced through partial calculation)  (dep) for a correct calculation using their rounded values eg. sight of 240000 (= 800 × 300) or 232000 (= 800 × 290) or 229100 (= 790 × 290)  or 16 (= 800 ÷ 50) or 15.8 = (790 ÷ 50)  or 6 (= 300 ÷ 50) or 5.8 = (290 ÷ 50)	Any attempt to find the exact answer gets NO marks even if followed by rounding Various operations possible
			for answer in range 4550 to 4800	

Q3.

Question	Working	Answer	Notes
		4 - 4.5	B1 Rounds appropriately using two of 5, 2 or 7 M1 $\sqrt{19}$ A1 4 - 4.5

Q4.

Question	Working	Answer	Mark	Notes
		600	3	(M2 for 300 ÷ 0.5 or 60 × 10 or 30 × 20) M1 for at least two of 30, 10 and 0.5 or sight of 300 or 60 or 20 A1 for 600 – 620 but not 601.1(198428...)  <b>OR</b> (M2 for 310 ÷ 0.5 or 62 × 10 or 31 × 20) M1 for at least two of 31, 10 and 0.5 or sight of 310 or 62 or 20 A1 for 600 – 620 but not 601.1(198428...)



Q5.

Question	Working	Answer	Mark	Notes
		2000	3	B1 for correctly rounding two of the three values (40, 100, 0.2) M1 for partially completing the calculation, e.g. $(40 \times 10) \div 0.2$ , $400 \div 0.2$ A1 cao

Q6.

Question	Working	Answer	Mark	Notes
		44 - 56	2	B2 for 44 - 56 (B1 for 1000 or 900 or 20 or 18 or 19, unless it is clear these have not come from estimation)

Q7.

Paper 1MA1: 3F				
Question	Working	Answer	Notes	
		Statement	C1 for a full explanation	

Q8.

Paper 1MA1: 1F				
Question	Working	Answer	Notes	
(a)		2000p- 2600p	P1 P1 A1	Evidence of estimate eg. 4 or 50 used in calculation complete process to solve problem 2000p-2600p or £20-£26
(b)		under	C1	underestimate as values have been rounded down

Q9.

Question	Working	Answer	Mark	Notes
		2400	3	B1 for one of 20, 40, 3 or 300 M1 for "20"x"40"x"3" or "20"x"40"x"300") (values do not need to be rounded) A1 for answer in range 2280 – 2520  SC : Award B3 for an answer of 2400 if no working seen  NB. An answer of 2416.05 implies B0 M1 A1



### Q10.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	Estimated value	P1	for using a rounded value in a correct process eg $3000 \div 15$ or $15 \times 8$ or $20 \times 8$	Their rounded value must be used in a calculation  Rounding may appear after a correct process eg $15.12 \times 8 = 120.96 \approx 100$ followed by eg $3069.25 \div 100$
		P1	for a full process to find the number of days eg “ $3000 \div 15 = 200$ ” or “ $3000 \div 15 \div 8 = 25$ ”	Accept $3069.25 \div 15.12 \div 8$ oe
		A1	for a correct answer following through their rounded values	
(b)	Explanation	C1	eg less days required or it doesn't affect the answer because I would still round 16.27 down to 15 (or up to 20)	Refers to time taken

### Q11.

Question	Working	Answer	Mark	Notes
(a)		12 000	M1	for approximations of 40 or 300 in a product, e.g. $40 \times 300$ or $40 \times 298$ or $39 \times 300$
			A1	for accurate answer to their product within the range 11700 to 12000
(b)		Overestimate plus reason	C1	fit for e.g. “overestimate since both estimates are greater than the exact values”

### Q12.

Question	Working	Answer	Mark	Notes
(a)		39	3	P1 for rounding one dimension correctly P1 for $(2 \times 2) + (5 \times 7)$ with at least three of 2, 2, 5, 7 used A1 cao
			1	C1 fit (dep on P1) underestimate with explanation
(b)		Justified answer		



Q13.

Question	Answer	Mark	Mark scheme	Additional guidance
	9	M1	for a method to find the scaling factor eg “10.8” ÷ “1.8” (= 6) or “1.8” ÷ 1.5 (=1.2) or 1.5 ÷ “1.8” (=0.833..) or a sf given from 5.5 to 6.5 or from 1.06 to 1.4 or from 0.75 to 0.94 eg used with 1.5	Could be shown on the diagram by appropriate working eg 6 steps Allow 10.6 to 11.0 and 1.6 to 2.0 for their measured lengths.
		A1	accept an answer in the range 8 to 10	