1 For each statement below, state whether it is **correct** or **incorrect**. Where it is incorrect, explain why.

(a) In 2.315 the second most significant figure is the 3. (1)

(b) 2.315 rounded to 3 s.f. is 2.31. (2)

(c) In the number 1832, the 8 is the most significant figure because it is the biggest digit. (2)

(d) 1832 rounded to 2 s.f. is 18. (2)

(e) In 0.0047 the 4 is the most significant figure. (1)

(f) 0.0047 rounded to 1 s.f. is 0.0050. (2)

(g) 4.038 rounded to 2 s.f. is 4.04. (2)

(h) 10.96 rounded to 1 s.f. is 10. (1)

(i) 10.96 rounded to 2 s.f. is 11. (1)

(j) 10.96 rounded to 3 s.f. is 10.9. (2)

(16 marks)

2 A plumber needs a piece of metal pipe which is 12.48 m long. His supplier can only cut pipes to a length correct to 3 significant figures.

(a) The plumber asks for a pipe cut to a length of 12.5 m. Will this definitely be long enough? Justify your answer. (3)

(b) What is the shortest length the plumber can ask for that guarantees a long enough pipe? (3)

(6 marks)

3 A plane has a baggage mass restriction of 22 kg (to 2 s.f.) per person. One traveller checks in two bags, of masses 10 kg (to 1 s.f.) and 11 kg (to 2 s.f.).

(a) Calculate the combined mass of the two bags to an appropriate degree of accuracy. (3)

(b) Is there a possibility that the traveller's baggage is heavier than allowed? Give a convincing argument. (3)

(6 marks)

4 A music venue seats exactly 3000 people. Tickets are sold by two promoters: Promoter 1 sells 1600 (to 2 s.f.) and Promoter 2 sells 1400 (to 2 s.f.).

(a) Is there a chance that too many tickets have been sold? Justify your answer. (3)

(b) Based on these ticket sales, what is the maximum number of empty seats possible? Justify your answer. (3)

(6 marks)