1) a) 252r5

b) 70r16

c) 91r20

d) 124r25

2) a) 116 coaches are needed. The last coach will only have 25 supporters on board.

b) They will be able to send out 131 boxes. There will be 4 books left over.

c) They will need 155 boxes. They will have 10 extra cartons.

1) Accept an explanation that shows that Oscar is correct. Oscar has used the prime factors of 14 to help him work out if the number is divisible by 14. 2 and 7 are the prime factors of 14; therefore, any number divisible by 2 and 7 will also be divisible by 14. Lorna has not used factors of 14; she has simply partitioned 14.

2) 4822 ÷ 22 = 219r4 1176 ÷ 24 = 49 2821 ÷ 11 = 256r5 1281 ÷ 21 = 61

a) Accept an explanation that shows this is sometimes true. For example, 4822 ÷ 22 has an even dividend and divisor but it still leaves a remainder. 1176 ÷ 24 has an even dividend and divisor and does not leave a remainder.

b) Accept an explanation that shows this is always true. For example, 1281 ÷ 21 doesn't leave a remainder. The factors of 21 are 1, 3, 7 and 21. 1281 ÷ 1 = 1281, 1281 ÷ 3 = 427 and 1281 ÷ 7 = 183.

c) Accept an explanation that shows this is sometimes true. For example, 2821 ÷ 11 leaves a remainder of 5, however 1176 ÷ 49 doesn't leave a remainder.

1) a)

1392 is a multiple of 2, 3, 8 and 16.	1650 is a multiple of 2, 3, 11 and 22.	1536 is a multiple of 2, 3, 8 and 16.
1824 is a multiple of 2, 3, 8 and 16.	3675 is a multiple of 3, 7 and 21.	1958 is a multiple of 2, 11 and 22.
1386 is a multiple of 2, 3, 7, 11, 21 and 22.	2420 is a multiple of 2, 11 and 22.	2058 is a multiple of 2, 3, 7 and 21.

b) Accept any answer that shows a relationship between some of the divisors. For example, if a number is divisible by 21 without leaving a remainder, it can also be divided by 3 and 7 without leaving a remainder.

c)

1392 is a multiple of 1, 2, 3, 4, 6, 8, 12 and 16.	1650 is a multiple of 1, 2, 3, 5, 6, 10, 11 and 15.	1536 is a multiple of 1, 2, 3, 4, 6, 8, 12 and 16.
1824 is a multiple of 1, 2, 3, 4, 6, 8, 12, 16 and 19.	3675 is a multiple of 1, 3, 5, 7 and 15.	1958 is a multiple of 1, 2 and 11 (and 22).
1386 is a multiple of 1, 2, 3, 6, 7, 9, 11, 14 and 18.	2420 is a multiple of 1, 2, 4, 5, 10, 11 and 20.	2058 is a multiple of 1, 2, 3, 6, 7 and 14.