

Miss Hughes' group – Reasoning and problem solving answers

Bronze

1a. £1 and 20p + £2 = £3 and 20, £1 and 20p + £2 and 10p = £3 and 30p and £1 and 20p + £2 and 30p = £3 and 50p

2a. Various answers, for example: (£1 + 50p + 20p) + (£2 + 50p + 10p) = £4 and 30p; (£2 + 10p + £1) + (£1 + 10p + 10p) = £4 and 30p

3a. Yes, this is possible as the difference is 20p and 20p is a silver coin.

1b. £2 and 30p + £3 = £5 and 30p, £2 and 10p + £3 = £5 and 10p and £2 and 20p + £3 = £5 and 20p.

2b. Various answers, for example: (£2 + 10p + 10p) + (£1 + 50p) = £3 and 70p; (£1 + 50p + £1 + 20p) + £1 = £3 and 70p

3b. No, this is not possible as the difference is 10p and you cannot make 10p using two bronze coins.

Silver

4a. Various answers, for example: £2 and 65p + £1 and 20p = £3 and 85p, £5 and 20p + £1 and 20p = £6 and 40p and £3 and 45p + £2 and 65p = £6 and 10p

5a. Various answers, for example: (£2 + £2 + 10p) + (£2 + 50p + 5p) = £6 and 65p; (£2 + £2 + 5p) + (£2 + 50p + 10p) = £6 and 65p

6a. Yes, this is possible as the difference is 30p which can be made with a 10p and a 20p coin.

4b. Various answers, for example: £5 and 20p + £3 and 85p = £9 and 5p, £5 and 20p + £2 and 85p = £8 and 5p and £5 and 20p + £3 and 5p = £8 and 25p

5b. Various answers, for example: (£2 + 1p) + (£1 + £1 + £1 + £2 + £2 + 2p + 2p) = £9 and 5p; (£1 + £1 + 1p) + (£2 + £2 + £2 + £1 + 2p + 2p) = £9 and 5p

6b. No, this is not possible as the difference is 5p which is a silver coin.

Gold

7a. A + B = £12 and 53p; A + C = £11 and 87p; A + E = £6 and 78p; A + F = £11 and 10p; B + E = £10 and 13p; E + F = £8 and 70p

8a. Various answers, for example: £5 and 21p (made up of: one £5 note, four 5p coins and one 1p coin) + £9 and 94p (made up of four £2 coins, three 50p coins, two 20p coins and two 2p coins) = £15 and 15p. 1 (odd) note and 16 (even) coins have been used.

9a. No, this is not possible as the difference is 20p. This can't be made with three identical coins.

7b. A + C = £20 and 71p; A + D = £21 and 40p; B + C = £19 and 37p; B + D = £20 and 16p; C + D = £26 and 5p; C + E = £22 and 5p; D + E = £22 and 74p

8b. Various answers, for example: £12 and 94p (made up of: two £5 notes, two £1 coins, four 20p coins, one 10p coin and two 2p coins) + £5 and 79p (made up of: one £5 note, one 50p coin, two 10p coins, one 5p coin and two 2p coins) = £18 and 73p. 15 coins and 3 notes have been used. 15 is three times greater than 3.

9b. Yes, this is possible as the difference is 55p. This can be made with a 50p coin which is even and a 5p coin which is odd.