Answers

Activity 1: Algebra worksheet

1 : $6m + 4n = 30$.

Total number of people	If m = ?	Then n = ?
30	1	6
30	2	4·5
30	3	3
30	4	1·5
30	5	0

The combinations of tables which give exactly 30 seats are:
1 × 6 seater and 6 × 4 seater
3 × 6 seater and 3 × 4 seater
5 × 6 seater and no 4 seater
2 : There are 23 chickens and 12 rabbits in the field.
3.a: Five possible solutions are:
$a = 1$, $b = 8$;
$a = 2$, $b = 6$;
$a = 3$, $b = 4$;
$a = 4$, $b = 2$;
$a = 5$, $b = 0$;

Five possible solutions are:
$c = 10$, $d = 0$;
$c = 11$, $d = 0{\cdot}5$;
$c = 12$, $d = 1$;
$c = 13$, $d = 1.5$;
$c = 14$, $d = 2$
3 b: For the equation $x + 30 = y - 70$, the pattern is that y is always 100 more than x.
For the equation $20s = 100 - 2t$, the pattern is that as s increases by 1, t decreases by 10.
Using a table to find solutions will make it easier to spot these patterns.

Activity 2: Solving equations worksheet

1. Two possible solutions:

3 × 5p and 5 × 2p

1 × 5p and 10 × 2p

25p could also be made using 5 × 5p coins but this would not satisfy the question since Alex also has 2p coins.

2. Assuming lengths are whole numbers, there are six possible solutions:

a = 1 cm, b = 11 cm (area = 11 cm^2)

a = 11 cm, b = 1 cm (area = 11 cm^2)

a = 2 cm, b = 10 cm (area = 20 cm^2)

a = 10 cm, b = 2 cm (area = 20 cm^2)

a = 3 cm, b = 9 cm (area = 27 cm^2)

a = 9 cm, b = 3 cm (area = 27 cm^2)