1) a) $x + 3 = 8$ is A

b) The other representations show the following equations:

B: $3x = 9$

C: $x + 3 = 6$

c) $x + 3 = 8, x = 5$ $3x = 9, x = 3$ $x + 3 = 6, x = 3$

2) a) $x = 12$ [>] $y = 11$

b) $x = 20$ [<] $y = 21$

c) $x = 14$ [=] $y = 14$

3) a) $x + 127 = 200$
$x = 200 - 127$
$x = 73$

b) $x - 95 = 74$
$x = 74 + 95$
$x = 169$

c) $10x = 65$
$x = 65 \div 10$
$x = 6.5$

1) The value of x in both equations is 50.5.

2) a) Nishi is incorrect as the right hand side of the balance shows $3x = 45$ and the expression she has written totals 44.

b) Accept any expressions totalling 45 e.g. $20 + 25$, $100 - 55$, $135 \div 3$, 9×5.

3) The first equation does not match as the bar model shows $x + 3 = 30$.
The second equation matches as the bar model shows $x + 15 = 30$.
The third equation does not match as the bar model shows $3x = 30$.

1) There are 6 possible values for x therefore 6 different equations:

$16 - 12.5 = 3.5$
$25 - 12.5 = 12.5$
$36 - 12.5 = 23.5$
$49 - 12.5 = 36.5$
$64 - 12.5 = 51.5$
$81 - 12.5 = 68.5$

2) Open ended question. The purpose of the question is to get children to create one-step equations, however some might extend their learning to create two-step equations. Possible answers could include:

$4x = 16, x = 4$ or $24 - x = 8, x = 16$

3) Using the given heights of sunflower A and B we can find the value of x:

$x + 25 = 73$cm
$x = 73 - 25$
$x = 48$cm

We can now find the height of sunflower D:

$100 - x = ?$
$100 - 48 = 52$ cm

Now that we know the height of sunflowers A, B and D we can subtract these from the total height of 235cm to find the height of sunflower C:

235cm − 198cm = 37cm

Sunflower C is 37cm in height.