Solving Equations

Be able to solve an equation

Harder Equations :-

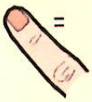
Look at these equations which involve both addition/subtraction and multiplication.

Example 1 :-

$2x + 1 = 7$
$2x = 6$
$x = 3$

$+ \ 1 = 7$

Ask yourself - "what", add 1, gives 7 ?
The answer is 6 => this means $2x = 6$



$2 \times \ = 6$

Now ask yourself - 2 times "what", gives 6 ?
The answer is 3 => this means $x = 3$

Can you see we can still use the cover up method ?

Discuss each of these examples with your teacher.

Examples :-

$3x - 2 = 25$
$3x = 27$
$x = 9$

$4x - 6 = 6$
$4x = 12$
$x = 3$

Exercise 3

1. Find the value of x by solving each equation below.
Copy and complete :-

a
$2x + 5 = 11$
$2x = 6$
$x = \ldots$

b
$3x + 1 = 13$
$3x = \ldots$
$x = \ldots$

c
$4x - 5 = 15$
$4x = \ldots$
$x = \ldots$

2. Find the value of x by solving these equations :-
Set down your working carefully.

a	$2x + 3 = 5$	b	$3x + 6 = 21$	c	$4x + 7 = 23$
d	$5x + 2 = 42$	e	$2x - 4 = 6$	f	$3x - 3 = 24$
g	$4x - 1 = 35$	h	$3x - 6 = 0$	i	$6x - 1 = 53$
j	$7x - 2 = 68$	k	$8x + 4 = 28$	l	$9x - 2 = 61$
m	$2x - 12 = 2$	n	$4x + 10 = 22$	o	$5x + 20 = 20$
p	$3x - 5 = 55$	q	$7x - 7 = 0$	r	$2x - 5 = 0$
s	$5x - 1 = 24$	t	$2x + 5 = 12$	u	$6x - 3 = 12.$

3. Look at the picture showing 2 rods end to end.

a Write down an expression, in terms of x, for the total length of the 2 rods.

b Given that the total length of the rods is actually 21 centimetres :-

(i) make up an equation involving x.

(ii) solve it to find the value of x.