1)	a)	Tick the	representation	which	matches	the	equation	2 <i>x</i> +	3 =	9.
-,	,		. 00. 000				0 01 01 01 0 1 1		_	



- **b)** Write down an equation to match each of the other representations.
- 2) Compare the value of x and y in these equations using <, > and =. Draw representations to show your working. Draw representations to show your working out.

$$3x + 4 = 16$$

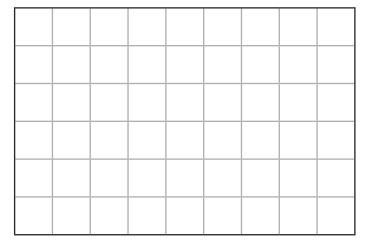
$$2y + 4 = 16$$
  $x$   $y$ 

$$4x - 5 = 15$$

$$2(x + 4) = 28$$
  $3(y + 4) = 27$ 

$$3(y + 4) = 27$$





3) Create three equations where x = 3, using the numbers and expressions below. Draw representations of your equations.

 $\chi$ 

2*x* 

5

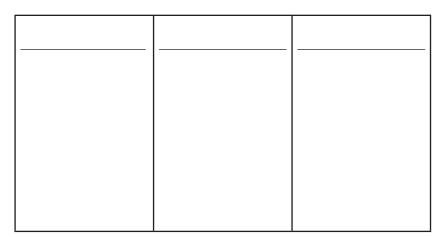
2

1

4

8

10



1) Is the value of the letter x the same in both equations? Prove your answer using diagrams and explain your reasoning.

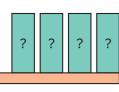


$$3(x + 4) = 30$$

$$3x + 4 = 22$$

I

2) a) Do you agree with Nishi? Explain your reasoning using diagrams.



If x = 4, then I can balance this equation using the expression 10 + 4 + 3.

=

 $\mbox{\bf b)} \quad \mbox{Write three different expressions that will balance this equation.}$ 

3) a) Do the operations correctly show how to use inverse operations to find the value of x? Explain your reasoning.

$$7(x-2) = 42$$
 $(x-2) = 6$ 
 $\div 7$ 
 $-2$ 

**b)** Complete the inverse operations to find the value of x.

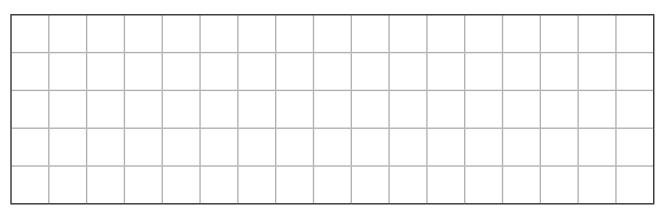
$$8(x + 3) = 96$$
 $(x + 3) = 12$ 
 $x = \begin{bmatrix} \\ \\ \\ \\ \end{bmatrix}$ 

There are six different possible values for x in this equation. Can you find them all and write the six different equations? Show your working out. One has been done for you:



x + 4 = 34

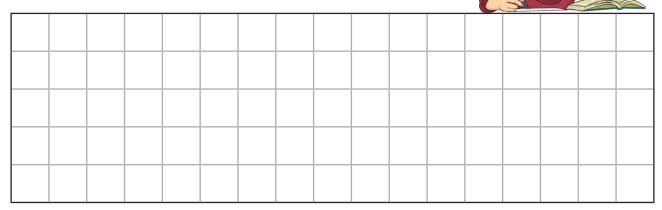
$$15x + 4 = 34$$
 where  $x = 2$ 



1) What could the missing digits in this equation be? Find more than one possible answer. For example: If x = 17, then 3x + 13 = 64

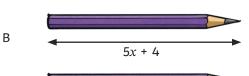
3 <i>x</i> +	=	

The value of x in my equation is a two-digit prime number less than 30. The answer to the equation is a square number.



2) The total length of all four pencils is 139cm. Pencils A and B are the same length. Find the length of pencil C.

Α



С



