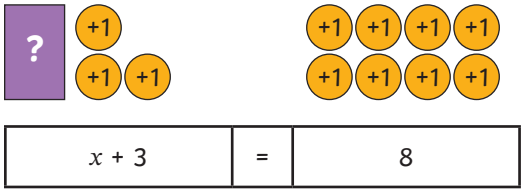
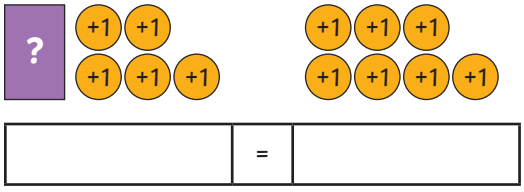
1) Rhys uses blocks and counters to help him form equations. Copy and complete the equations for the following representations. The first one has been completed for you.

a)



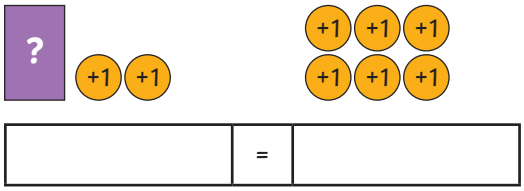
$x + 3$	=	8

b)



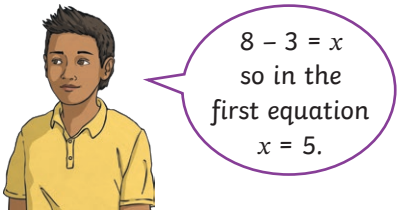
	=	

c)

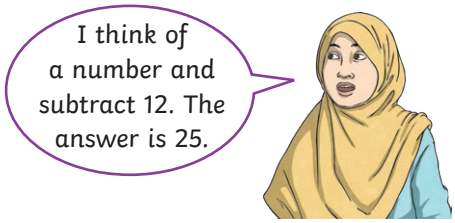


	=	

2) Rhys knows that he can use inverse operations to find the value of x in each equation.
Use inverse operations to find the value of x in the other two equations. Show your working out.



3) Nishi has created a number riddle.



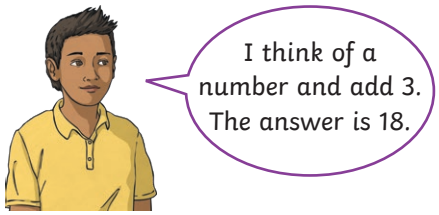
Nishi writes down her riddle as an equation: $x - 12 = 25$

She then writes the inverse equation which she can use to find the value of x.

$x = 25 + 12$ so $x = 37$

Think of three of your own number riddles and write two equations to represent each of them.

1) Rhys uses the equation $3x = 18$ to create a number riddle. However, he makes a mistake. Explain the mistake Rhys has made.

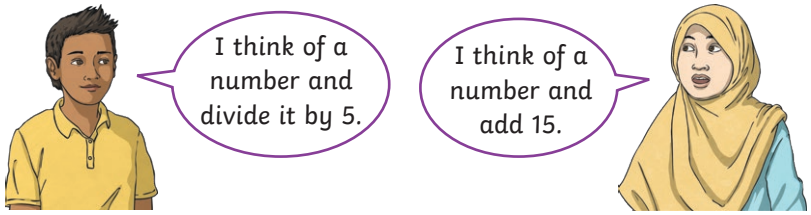


2) Are these both the same equation? Explain your answer.

$x - 32 = 10$

$10 = x - 32$

3) Rhys and Nishi have created their own number riddle expressions.



a) Rhys and Nishi are both thinking about the same number. Rhys's answer is 9. What is the answer to Nishi's number riddle?

b) Do you think it would be possible for Rhys and Nishi to think of the same positive number and get the same answer? Explain your reasoning.

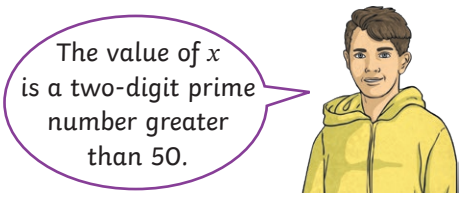
1) Is the value of the letter x the same in both equations?
Prove your answer using diagrams and explain your reasoning.

$x + 9 = 15$

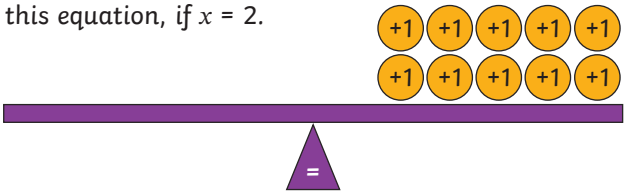
$5x = 30$

2) What could the answer to this equation be? How many possible answers are there?

$x - 20 =$ _____



3) Write four different expressions involving x that will balance this equation, if $x = 2$.
Use a different operation in each expression.



4) Find ten different equations you can form using any of these digits, letters and symbols?
Draw an image or write a word problem for each equation you find.

3	=	x	6	12	−	+	9