

Check out

You should now be able to ...

✓	Questions	6
✓	Solve equations, including with brackets and fractions.	1 - 3
✓	Create your own equations and solve them.	4 - 5
✓	Use trial and improvement to solve equations.	6 - 7

Test it

Questions

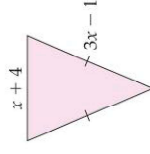
1 Solve these equations.

- a $7x - 5 = 58$
 - b $4x + 9 = 11$
 - c $8x + 20 = 4$
 - d $-25 = 14x - 4$
 - e $\frac{3x-1}{4} = 2$
 - f $\frac{x}{2} + 13 = 19$
 - g $14 - 2x = -6$
- 2 Solve these equations.
- a $24 = 6(3x + 16)$
 - b $6(3b - 4) + 8(2b - 5) = 140$
 - c $3(5c + 7) - 2(9c - 3) = -6$
 - d $2(4x - 1) + 3x = -13$
- 3 Solve these equations.
- a $6g + 14 = 28 - g$
 - b $21 - 3h = 69 + h$
 - c $8(6j - 15) = 12(38 - 2j)$
 - d $12 - 5j = -66 - 11j$
 - e $\frac{1}{2}(11x - 3) = 8x + 6$
 - f $\frac{12x - 7}{5} = 2x + 5$

4



c



5 Copy and complete this table to find a solution of $x^3 + x = 200$.

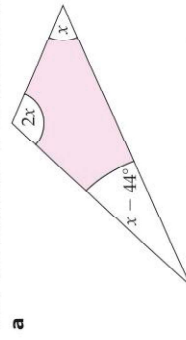
x	x^3	$x^3 + x$	Result
5	125	130	low

6 Use a trial and improvement method to find a positive solution of the following equations. Give your answers correct to 1 dp.

- a $x^4 = 35$
- b $3^x = 18$
- c $x^3 + x^2 = 100$

7 A cuboid has side lengths p , p and $p + 2$. The volume of the cuboid is 70 cm^3 . Find p correct to 1 dp.

4 Find the value of x in each diagram.



What next?

Score	
0 - 2	Your knowledge of this topic is still developing. To improve look at Formative test: 3B-10; MyMaths: 1057, 1154, 1182 and 1928
3 - 5	You are gaining a secure knowledge of this topic. To improve look at Invisible: 214, 231, 234, 235, 236, 237, 238 and 242
6	You have mastered this topic. Well done, you are ready to progress!



Language Meaning Example

Equation	A statement using letters and numbers that contains an equals symbol and an unknown.	$6x - 2 = 28$
Unknown	The letter in the equation that you are trying to find the value of.	In the equation $6x - 2 = 28$ x is the unknown.
Inverse operation	The mathematical operation that undoes an operation.	Multiplying and dividing are inverse operations. When you multiply by 5, you can undo this by dividing by 5.
Expand brackets	Remove brackets by multiplying by the value outside the bracket.	Expand the brackets: $6(4x - 3)$ becomes $24x - 18$.
Trial and improvement	A method for solving complex equations by making a guess, then improving on that guess until you are very close to the correct answer.	The equation $x^3 + x = 245$ can be solved by trial and improvement.