# Equations involving Fractions

### Section A

1. a) Solve  b) Solve 

c) Explain why a first step of adding 4 to both sides was a better idea in part b) than in part a)

2. Kaye is solving the equation 

Would it be a better first move to multiply both sides by 5 or to add 13 to both sides? Why?

3. a) Solve  by adding 10 to both sides first.

b) Solve  by multiplying both sides by 2 first.

c) Check you got the same answer in both. If not, go back and try again.

d) Which method do you prefer? Why?

4. Solve the following equations using your preferred method.

1. 
2. 
3. 
4. 
5. 
6. 
7. 

### Section B

5. a) Solve  by adding first

b) Solve  by multiplying first

c) Check you got the same answer in both. If not, go back and try again.

d) Which method do you prefer? Why?

6. Solve the following equations using your preferred method.

1. 

7. Write an equation with the solution *x* = 2 where the “easiest” first step is to multiply by 3.

8. Write an equation with the solution *x* = 7 where the “easiest” first step is to subtract 7, the “easiest” second step is to divide by 2 and the “easiest” third step is to add 9.

9. Solve  two different ways

**Section C**

In each of these problems, work out as much information as you can.

1. Sonia thinks of a number.

Theo subtracts 8 from Sonia’s number and divides the answer by 3.

James subtracts 9 from Sonia’s number.

Theo and James get the same answer.

2. In 30 years I’ll be 5 times as old as I was 14 years ago.

3. My cat is quite old, and has had the same weight for a very long time. My dog, when he was a puppy, weighed 2kg more than my cat. Now he weighs 10kg more than my cat. In fact my puppy’s weight has doubled in this time. Work something out!

# Equations involving fractions - Homework

1. Donald Duck thinks that the solution to the equation below is x = 1. Is he correct?

 [Hint: Do not try to solve this!!!!]

2. Solve the following equations.

a) 

b) 

c) 

d) 

e) 

f) 

g) 

h) 

3.\* Solve 

4. Joel is trying to solve the equation 

His steps are as follows:



a) Do you like his method? Would you have done anything differently?

If so, have a go and see if you get the same answer.

b) Use yours or Joel’s method to solve the following:

i)  ii) 