



Solving Equations with Fractions

- 1 For each of the following equations, write down the order of the operations applied to x . Some examples have been done for you.

Example 1

$$\frac{x}{2} + 5 = 8$$

1. Divide by 2
2. Plus 5

Example 2

$$\frac{x+5}{2} = 8$$

1. Plus 5
2. Divide by 2

Example 3

$$\frac{3x+5}{2} = 8$$

1. Multiply by 3
2. Plus 5
3. Divide by 2

a) $\frac{x}{2} + 1 = 5$

b) $\frac{x}{3} + 1 = 5$

c) $\frac{x}{3} - 1 = 5$

d) $\frac{x-1}{3} = 5$

e) $\frac{x-2}{3} = 5$

f) $\frac{x-2}{4} = 5$

g) $\frac{3x-2}{4} = 5$

h) $\frac{3x-2}{6} = 5$

i) $\frac{7x-2}{6} = 5$

- 2 For each of the parts in question 1, write the inverse of each operation in brackets. The same three examples from above have been done for you.

Example 1

$$\frac{x}{2} + 5 = 8$$

1. Divide by 2 (x2)
2. Plus 5 (-5)

Example 2

$$\frac{x+5}{2} = 8$$

3. Plus 5 (-5)
4. Divide by 2 (x2)

Example 3

$$\frac{3x+5}{2} = 8$$

4. Multiply by 3 ($\div 3$)
5. Plus 5 (-5)
6. Divide by 2 (x2)

- 3 Use your answers to questions 1 and 2 to solve each of the equations in question 1.

Additional space for question 3.

4 Solve the equations below. Show all of your working.

a) $\frac{x}{2} - 1 = 5$

b) $\frac{x}{2} - 4 = 5$

c) $\frac{x}{3} - 4 = 5$

d) $\frac{x}{3} - 4 = 6$

e) $\frac{x-4}{3} = 6$

f) $\frac{x-5}{3} = 6$

g) $\frac{x-5}{4} = 6$

h) $\frac{x-5}{4} = 7$

i) $\frac{2x-5}{4} = 7$

j) $\frac{3x-5}{4} = 7$

k) $\frac{3x-5}{4} = 8$

l) $\frac{5-3x}{4} = 8$