# Plotting Quadratic Graphs 2

In the following part you are going to factorise some quadratic expressions then plot their graphs. For each one **look for connection between the expression and the graph**.

1. Factorise the expression x² + x – 6 in the form (x – a)(x – b)
2. Plot the graph of y = x² + x – 6
3. Factorise x² + 4x + 4
4. Plot y = x² + 4x + 4
5. Factorise x² - 16
6. Plot y = x² - 16
7. Factorise 2x² - 10x + 8 in the form k(x – a)(x – b)
8. Plot y = 2x² - 10x + 8
9. Factorise 3x² - 12
10. Plot y = 3x² - 12
11. Factorise –x²- 6x – 5
12. Plot y = –x²- 6x – 5

Your findings should help you answer the following questions. If you are unsure try some more examples of your own.

1. Describe the connection between the factorized form of the quadratic and its graph.
2. Describe what the graph of y = (x – a)(x – b) would look like?
3. Describe the graph of y = (x – a)².
4. Describe the graph of y = (x – a)(x + a).
5. What is the difference between the graphs y = (x – a)(x – b) and y = 2(x – a)(x – b)?
6. What is the difference between the graphs y = (x – a)(x – b) and y = -(x – a)(x – b)?

# Fireman Sam Games

Now play the Fireman Sam Games.

*“Quick! Put out the fire! Enter the correct equation so that Sam stands by the hosepipe and he aims at the fire.”*