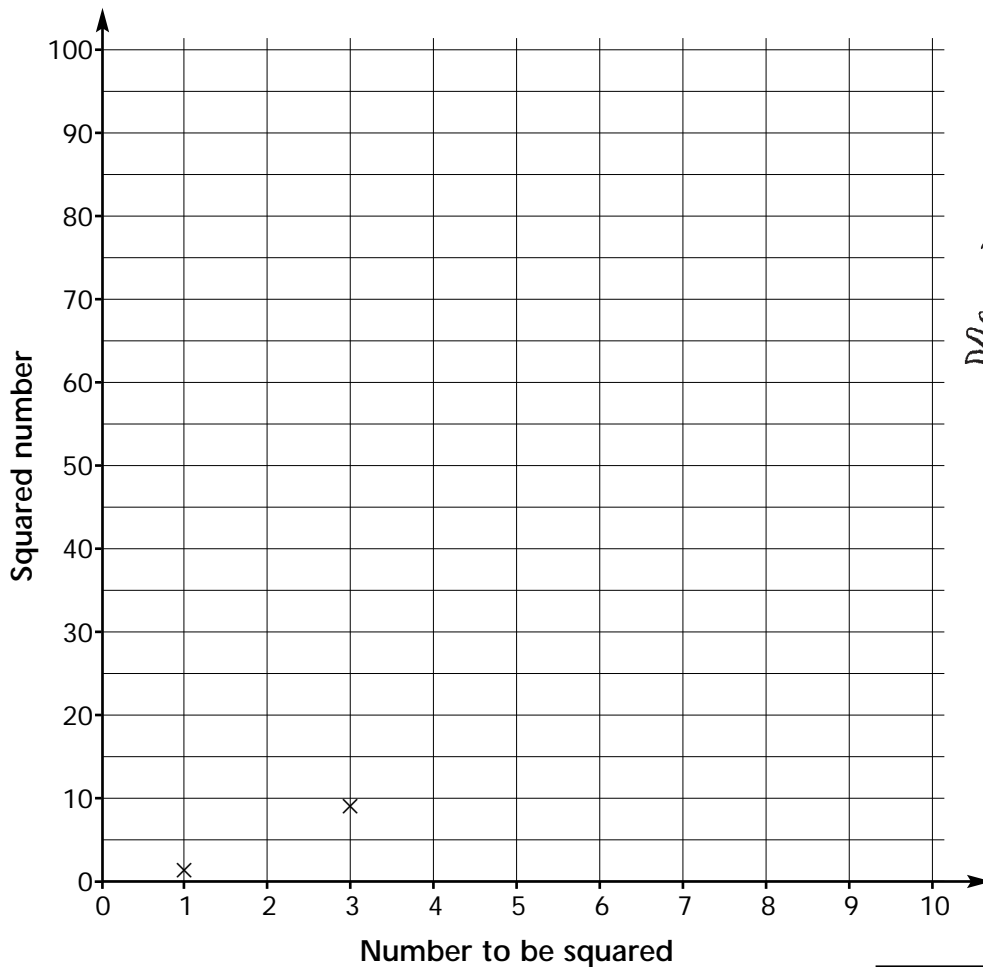


The root of the problem

A

1. Plot the squares of the numbers 1 to 10 on this graph and join the points with a curve.



Finding the square root ($\sqrt{\quad}$) is the opposite of squaring. **!**

2. Use the graph to help you estimate these values.

- (a) $\sqrt{30} \approx$ _____ (b) $\sqrt{72} \approx$ _____ (c) $\sqrt{2} \approx$ _____ (d) $\sqrt{55} \approx$ _____
 (e) $3.5^2 \approx$ _____ (f) $7.7^2 \approx$ _____ (g) $8.2^2 \approx$ _____ (h) $9.75^2 \approx$ _____

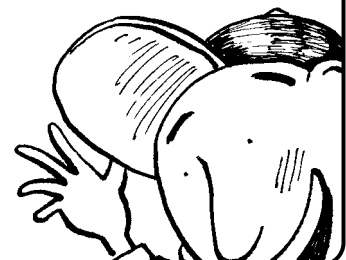
3. Now use the $\sqrt{\quad}$ and x^2 keys on your calculator to check your answers. Give your answers to one decimal place.

- (a) $\sqrt{30} \approx$ _____ (b) $\sqrt{72} \approx$ _____ (c) $\sqrt{2} \approx$ _____ (d) $\sqrt{55} \approx$ _____
 (e) $3.5^2 \approx$ _____ (f) $7.7^2 \approx$ _____ (g) $8.2^2 \approx$ _____ (h) $9.75^2 \approx$ _____

B

Arrange the numbers in each group in ascending order.

- (a) 40.4496 40.96 40.005 40.1956 40.094
 40.005, _____
 (b) 73.4449 73.6164 73.1025 73.646 73.019



Remember that \approx means 'approximately equal to'. When you compare the numbers in part B, work from the most significant digit (that is, the digit furthest to the left which is not a zero). Finding the square root is finding which number has been multiplied by itself to get the given number: for example, the square root of 16 is 4, because $4 \times 4 = 16$.