

To multiply  $9 \times 4$ , start with the 9 on the outer scale. This is printed as 90 but, as described earlier, can represent 90, 9, 0.9, etc. The position of the 9 represents the log value of 9. To this you have to add the log of 4. Put the 10 of the inside scale under the 9 on the outer scale. This has aligned the starting point of the inner scale with the log value of 9. Move around the inner scale to 4 (40) which is the position for the log of 4. You have now added the log value of 4 to the log value of 9, which gives a resultant log value position on the outer scale of 36. Therefore, the answer is 36.

To divide when using logs, the log of the divisor is subtracted from the dividend. To divide 36 by 4, start with the log value of 36 on the outer scale. From this position you have to take away the log value of 4. This means you have to move in an anticlockwise direction on the scale. Set 4 on the inner scale under 36 on the outer scale. By moving anticlockwise on the inner scale to the 10 position, you have taken the log value of 4 away from the log value of 36, which gives a resultant log value position on the outer scale of 9. Therefore, the answer is 9.

When using larger numbers for multiplication and division, you have to decide where to place the decimal point; i.e.  $9 \times 40$  would be 360, not 36 or 3600.

When you are not sure of the last numeral in your answer, use the following method.  $16 \times 17$  is just over 270 on the slide rule. Multiply the last numeral in each group to obtain the last numeral in your answer.  $6 \times 7$  is 42, therefore the last numeral in the answer will be 2 which will make it 272.

### **3. CONVERSIONS BETWEEN ENGLISH AND METRIC UNITS**

On the outside of the slide rule there are radial lines with their values attached in either weight, length or volume. To convert one unit of measurement to another, place the known amount of one unit on the inner scale under the line representing that unit and read