Calculations with brackets

Order of operations

When faced with something like $5^2 - 2 \times (7 - 3)$ you have to work out each part in the correct order, else you'll get the wrong answer. Always do operations in this order:

Brackets	$5^2 - 2 \times (7 - 3)$
Squares	$= 5^2 - 2 \times 4$
Divide and Multiply	$= 25 - 2 \times 4$
Add and Subtract	$= 25 - 8$
	$= 17$

You can remember the order of operations with the word **BIDMAS.** Brackets, then Indices, Division, Multiplication, Addition, Subtraction.
('Indices' is the fancy word for squares, cubes, etc.)

If there are several multiplications and divisions (or additions and subtractions) do them one at a time from left to right.

For example:

$24 \div 6 \div 2$
$= 4 \div 2$
$= 2$ ✔

Not:

$24 \div 6 \div 2$
$= 24 \div 3$
$= 8$ ✘

To make it clear it would be better to write this with brackets as $(24 \div 6) \div 2$.

Brackets on a calculator

Use the bracket buttons, ( ), on your calculator exactly where they appear in a calculation. For 72 – (18 + 36) press:

7 2 – (1 8 + 3 6) = to get 18.

Look out for sneaky brackets:

$\frac{16 - 10}{2}$ is really $(16 - 10) \div 2$, so you have to use brackets.

Press: (1 6 – 1 0) ÷ 2 = ✔

Not: 1 6 – 1 0 ÷ 2 = ✘

TEST

Work these out on paper. Check your answers on a calculator.

a $3 \times 5 - 2 \times 4$ **b** $2.8 \times (15 - 2)$ **c** $56 \div 4 \div 2$ **d** $\frac{28}{11 + 3}$