**Using Pascal’s Triangle**

Without using a calculator:

(a) write out the first seven rows of Pascal’s triangle.

(b) Hence find the expansions of:

(i) $(1+x)^{5}$ (ii) $(1+x)^{7}$

Using your calculator, find:

(a) $5C3$(b) $8C0$(c) $10C5$

(d) $6C1$(e) $9C9$(f) $7C4$

Using your calculator, find:

(a) The first four terms, in ascending powers of $x$, in the expansion of $(1+x)^{10}$

(b) The first four terms, in ascending powers of $x$, in the expansion of $(1+x)^{8}$

(c) The first three terms, in ascending powers of $x$, in the expansion of $(1+x)^{13}$

(d) The first three terms, in ascending powers of $x$, in the expansion of $(1+x)^{16}$

Write down the combination you would use, and its value, for:

(a) The coefficient of the $x^{4}$ term in the expansion of $(1+x)^{9}$

(b) The coefficient of the $x^{2}$ term in the expansion of $(1+x)^{6}$

(c) The coefficient of the $x$ term in the expansion of $(1+x)^{12}$

(d) The coefficient of the $x^{3}$ term in the expansion of $(1+x)^{20}$

**Using Pascal’s Triangle**

Without using a calculator:

(a) write out the first seven rows of Pascal’s triangle.

(b) Hence find the expansions of:

(i) $(1+x)^{5}$ (ii) $(1+x)^{7}$

Using your calculator, find:

(a) $5C3$(b) $8C0$(c) $10C5$

(d) $6C1$(e) $9C9$(f) $7C4$

Using your calculator, find:

(a) The first four terms, in ascending powers of $x$, in the expansion of $(1+x)^{10}$

(b) The first four terms, in ascending powers of $x$, in the expansion of $(1+x)^{8}$

(c) The first three terms, in ascending powers of $x$, in the expansion of $(1+x)^{13}$

(d) The first three terms, in ascending powers of $x$, in the expansion of $(1+x)^{16}$

Write down the combination you would use, and its value, for:

(a) The coefficient of the $x^{4}$ term in the expansion of $(1+x)^{9}$

(b) The coefficient of the $x^{2}$ term in the expansion of $(1+x)^{6}$

(c) The coefficient of the $x$ term in the expansion of $(1+x)^{12}$

(d) The coefficient of the $x^{3}$ term in the expansion of $(1+x)^{20}$