**8D Finding Coefficients in Expressions**

1. Find the coefficient of $x^{4}$ in $\left(2+3x\right)^{10}$
2. Find the coefficient of $x^{3}$ in $\left(2+x\right)\left(3-2x\right)^{7}$
3. If $g\left(x\right)=(1+kx)^{10}$, where $k$ is a constant, and the coefficient of $x^{3}$ is 15, find the value of $k$.
4. Write down the first three terms, in ascending powers of $x$, of the binomial expansion of $(1+qx)^{8}$, where $q$ is a non-zero constant.
5. Given that, in the expansion of $(1+qx)^{8}$, the coefficient of $x$ is $–r $and the coefficient of $x^{2}$ is $7r$, find the values of $q$ and $r$