

### Activity 3

#### Activity 3 Answers and Comments

1. Three main ideas involved

$$\frac{5}{x^2} = 5x^{-2} \text{ and then } x^n \rightarrow nx^{n-1} \text{ for (a) with } x^n \rightarrow \frac{x^{n+1}}{n+1} + C \text{ for (b)}$$

Mainly recall (of **facts**) with a small amount of technique ( e.g. knowing that  $\frac{5}{x^2}$  has to be turned into  $5x^{-2}$  before any calculus can be done.

2. The formula for expanding  $(1 + x)^n$  is in the Formula Book, so it's a case of applying the given formula with  $x$  replaced by  $-x$  and  $n$  by 8

So this seems to be more like using a **simple technique** than recall.

Because most calculators have an  ${}_nC_r$  most on the simplification can be done directly on the calculator if the alternative  $(a + b)^n$  is used from the Formula Book.

$$\text{Answer is } 1 - \frac{5}{4}x + \frac{45}{64}x^2 - \frac{15}{64}x^3$$

3. Mainly **recall** – possibly something more required for part (c)

Answers are (a) (5, -4) (b) (3, 4) (c) (3, -2) (d) (3, 0)