

**Algebra Topics: Miscellaneous**

1. In the following expressions  $n$  is any positive integer. State whether each expression is always odd, always even, or sometimes even and sometimes odd. Give reasons for your answer.
- a.  $n(n + 1)$  [3]
- b.  $(2n + 1)(4n + 3)$  [3]
2. A circle of radius  $2x$  cm is cut out of a rectangular piece of paper with length  $6x$  cm and width  $5x$  cm. Find, in terms of  $x$  and  $\pi$ , the area of paper remaining after the circle has been removed. [4]