

- Use a chord-slope function with $h = 0.01$ to get an approximate value of $f'(x)$ for $f(x) = x^3$ for each integer value of x from -4 to 4 .
- Deduce a formula for $f'(x)$.
- Now repeat this for:

1 $f(x) = 2x^3$

2 $f(x) = 5x^3$

3 $f(x) = 2x^3 + 3x$

4 $f(x) = -x^3 + 2x$

5 $f(x) = x^3 + x^2$

6 $f(x) = 2x^3 - 3x^2$

7 $f(x) = 4x^3 + x^2 - 7x$

8 $f(x) = 3x^3 - 2x^2 - x$

- Deduce a formula for $f'(x)$ for $f(x) = ax^3 + bx^2 + cx + d$
- You could see if your formula is correct by using the gradient function facility on a graph plotter or on a computer algebra system such as **DERIVE**.