Worksheet

Exercise 3

- **1.** Determine the *x*-values if:
 - **1.1** $f(x) = 2x^3 x^2 x$
 - **1.3** $f(x) = x^3 + 3x^2 x 3$ **1**
- **1.2** $f(x) = x^3 + 9x^2 + 23x$ **1.4** $f(x) = x^3 + 3x^2 - 6x$
- **2.** Given: $f(x) = -2x^3 + 5x^2 + 4x 3$
 - **2.1** Draw a sketch of f(x). It need not be according to scale.
 - **2.2** Determine the *x*-intercepts.
 - **2.3** Determine the *y*-intercepts.
 - 2.4 Determine the coordinates of the turning and inflection points.
- 3. Given: $f(x) = x^3 6x^2 + 4x + 12$
- 3.1 Determine f'(x).
- 3.2 Draw a sketch of f(x). It need not be according to scale.
- **3.3** Determine the *x*-intercepts.
- **3.4** Determine the *y*-intercepts.
- 3.5 Determine the coordinates of the turning and inflection points.
- **4.** Given: $f(x) = 2x^3 3x^2 + x 1$.
 - 4.1 Determine f'(x).
 - 4.2 Draw a sketch of f(x). It need not be according to scale.
 - **4.3** Determine the *x*-intercepts.
 - 4.4 Determine the *y*-intercepts.
 - 4.5 Determine the coordinates of the turning and inflection points.

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