

Example sheet 0 - formative

1. sketch the graphs of the following functions:

- (a) $f(x) = 3x^2;$
- (b) $y = f(x) = 3x^2 - 3x - 6;$
- (c) $y = -3x^2 + 3x - 6;$
- (d) $y = 3x^2 + 3x + 6;$
- (e) $y = 3x^3 - 6x^2 - 3x + 6;$
- (f) $y = -2x^3 + 22x^2 - 80x + 96;$
- (g) $y = -2x^3 + 4x^2 + 2x + 2;$
- (h) $y = 3x^3 - 6x^2 - 3x + 16;$
- (i) $y = 3x^4 - 15x^2 + 12;$
- (j) $y = 3x^4 - 15x^2 + 22.$

2. Sketch the following curves first on a $x - y$ plane (y on the horizontal axis) and then on a $y - x$ plane (x on the horizontal axis):

- (a) $x = y^2;$
- (b) $x = 3y^2 - 3y - 6.$

3. Sketch the following curves:

- (a) $3x^2 + 3y^2 = 12;$
- (b) $3x^2 + 6y^2 = 18;$
- (c) $3x^2 - 6y^2 = 3;$
- (d) $3x^2 - 6y^2 = 0.$