

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) $3x^2 - 6y^2 = 0$.