

'Real-life' illustration of construction of sets by  
Method of Specification.

- Use as 'selection criterion' the predicate with variable  $x$  below:  
' $x$  is a Broadbase Science student'.

Apply this 'selection criterion' to the set of all students  
of MATH1030B, to be labeled  $B$  below.

Denote the resultant set by  $S$ .

$$S = \{ x \in B : x \text{ is a Broadbase Science student} \}$$

$S$  stands for the collection of those, and only those, students  
who have registered in MATH1030B  
and who come from Broadbase Science.

'School maths' illustration of construction of sets by Method of Specification.

- Use as 'selection criterion' the predicate with variable  $x$  below:

$$x(x^2 - 1)(x^2 + 1)(x^2 - 2) = 0$$

Apply this 'selection criterion' to  $\mathbb{R}$ . Denote the resultant set by  $S$ .

$$S = \{x \in \mathbb{R} : x(x^2 - 1)(x^2 + 1)(x^2 - 2) = 0\}.$$

It turns out that  $S = \{0, 1, -1, \sqrt{2}, -\sqrt{2}\}$ .

Apply the same 'selection criterion' to  $\mathbb{Z}$ . Denote the resultant set by  $T$ .

$$T = \{x \in \mathbb{Z} : x(x^2 - 1)(x^2 + 1)(x^2 - 2) = 0\}.$$

It turns out that  $T = \{0, 1, -1\}$ .