

**STEP/General Q1 (13/6/23)**

(i) Does  $\sqrt{4}$  equal 2 or  $\pm 2$ ? (ii) Simplify  $\sqrt{x^2}$

**Solution**

(i)  $\sqrt{4} = 2$

[By convention, the square root symbol denotes the positive root (consider the  $\pm$  in the quadratic formula, which wouldn't be needed if the square root symbol covered both positive and negative roots). Note that the solution of  $x^2 = 4$  is  $x = \pm\sqrt{4}$ .]

(ii)  $\sqrt{x^2} = |x|$  [Note that  $x$  could be negative.]