

Surds (1) Surds are just square roots of imperfect squares. (NON CALC)

Rules	Helpful results
$\sqrt{a} \times \sqrt{a} = a$	$\sqrt{a} + \sqrt{a} = 2\sqrt{a}$
$\sqrt{a} \times \sqrt{b} = \sqrt{ab}$	$2\sqrt{b} - \sqrt{b} = \sqrt{b}$ (You can only add/subtract like surds).

Simplify the following (where possible):

$\sqrt{12}$		$\sqrt{24}$		$\sqrt{200}$	
$\sqrt{18}$		$\sqrt{54}$		$\sqrt{45}$	
$\sqrt{27}$		$\sqrt{200}$		$\sqrt{50}$	
$\sqrt{32}$		$\sqrt{42}$		$\sqrt{20}$	
$\sqrt{52}$		$\sqrt{13}$		$\sqrt{10}$	

Undo the following!

$2\sqrt{3}$		$3\sqrt{6}$	
$5\sqrt{3}$		$5\sqrt{5}$	

Fully simplify the following

$\sqrt{3} \times \sqrt{2}$		$\sqrt{2} + \sqrt{2}$	
$\sqrt{5} \times \sqrt{3}$		$2\sqrt{3} + \sqrt{3}$	
$\sqrt{5} \times \sqrt{5}$		$\sqrt{3} + \sqrt{12}$	
$\sqrt{3} \times \sqrt{6}$		$\sqrt{5} + \sqrt{20}$	
$\sqrt{5} \times 2\sqrt{3}$		$2\sqrt{18} + 3\sqrt{2}$	
$2\sqrt{5} \times 3\sqrt{5}$		$\sqrt{32} + \sqrt{50}$	
$4\sqrt{3} + \sqrt{27} - 5\sqrt{3}$			
$\sqrt{50} - 2\sqrt{2} + \sqrt{32}$			
$\sqrt{125} + \sqrt{25} - \sqrt{45} + 1$			
$\sqrt{2}(3 + \sqrt{2})$			
$\sqrt{5}(5 + \sqrt{2})$			
$3(3 + \sqrt{6})$			
$\sqrt{a}(\sqrt{b} + \sqrt{a})$			
$(2 + \sqrt{3})(3 + \sqrt{3})$			
$(3 + \sqrt{2})(2 - \sqrt{2})$			
$(b + \sqrt{a})(b - \sqrt{a})$			

Surds (1) Surds are just square roots of imperfect squares. (NON CALC)

Rules	Helpful results
$\sqrt{a} \times \sqrt{a} = a$	$\sqrt{a} + \sqrt{a} = 2\sqrt{a}$
$\sqrt{a} \times \sqrt{b} = \sqrt{ab}$	$2\sqrt{b} - \sqrt{b} = \sqrt{b}$ (You can only add/subtract like surds).

Simplify the following (where possible):

$\sqrt{12}$		$\sqrt{24}$		$\sqrt{200}$	
$\sqrt{18}$		$\sqrt{54}$		$\sqrt{45}$	
$\sqrt{27}$		$\sqrt{200}$		$\sqrt{50}$	
$\sqrt{32}$		$\sqrt{42}$		$\sqrt{20}$	
$\sqrt{52}$		$\sqrt{13}$		$\sqrt{10}$	

Undo the following!

$2\sqrt{3}$		$3\sqrt{6}$	
$5\sqrt{3}$		$5\sqrt{5}$	

Fully simplify the following

$\sqrt{3} \times \sqrt{2}$		$\sqrt{2} + \sqrt{2}$	
$\sqrt{5} \times \sqrt{3}$		$2\sqrt{3} + \sqrt{3}$	
$\sqrt{5} \times \sqrt{5}$		$\sqrt{3} + \sqrt{12}$	
$\sqrt{3} \times \sqrt{6}$		$\sqrt{5} + \sqrt{20}$	
$\sqrt{5} \times 2\sqrt{3}$		$2\sqrt{18} + 3\sqrt{2}$	
$2\sqrt{5} \times 3\sqrt{5}$		$\sqrt{32} + \sqrt{50}$	
$4\sqrt{3} + \sqrt{27} - 5\sqrt{3}$			
$\sqrt{50} - 2\sqrt{2} + \sqrt{32}$			
$\sqrt{125} + \sqrt{25} - \sqrt{45} + 1$			
$\sqrt{2}(3 + \sqrt{2})$			
$\sqrt{5}(5 + \sqrt{2})$			
$3(3 + \sqrt{6})$			
$\sqrt{a}(\sqrt{b} + \sqrt{a})$			
$(2 + \sqrt{3})(3 + \sqrt{3})$			
$(3 + \sqrt{2})(2 - \sqrt{2})$			
$(b + \sqrt{a})(b - \sqrt{a})$			

Surds (1) Surds are just square roots of imperfect squares. (NON CALC)

Rules	Helpful results
$\sqrt{a} \times \sqrt{a} = a$	$\sqrt{a} + \sqrt{a} = 2\sqrt{a}$
$\sqrt{a} \times \sqrt{b} = \sqrt{ab}$	$2\sqrt{b} - \sqrt{b} = \sqrt{b}$ (You can only add/subtract like surds).

Simplify the following (where possible):

$\sqrt{12}$		$\sqrt{24}$		$\sqrt{200}$	
$\sqrt{18}$		$\sqrt{54}$		$\sqrt{45}$	
$\sqrt{27}$		$\sqrt{200}$		$\sqrt{50}$	
$\sqrt{32}$		$\sqrt{42}$		$\sqrt{20}$	
$\sqrt{52}$		$\sqrt{13}$		$\sqrt{10}$	

Undo the following!

$2\sqrt{3}$		$3\sqrt{6}$	
$5\sqrt{3}$		$5\sqrt{5}$	

Fully simplify the following

$\sqrt{3} \times \sqrt{2}$		$\sqrt{2} + \sqrt{2}$	
$\sqrt{5} \times \sqrt{3}$		$2\sqrt{3} + \sqrt{3}$	
$\sqrt{5} \times \sqrt{5}$		$\sqrt{3} + \sqrt{12}$	
$\sqrt{3} \times \sqrt{6}$		$\sqrt{5} + \sqrt{20}$	
$\sqrt{5} \times 2\sqrt{3}$		$2\sqrt{18} + 3\sqrt{2}$	
$2\sqrt{5} \times 3\sqrt{5}$		$\sqrt{32} + \sqrt{50}$	
$4\sqrt{3} + \sqrt{27} - 5\sqrt{3}$			
$\sqrt{50} - 2\sqrt{2} + \sqrt{32}$			
$\sqrt{125} + \sqrt{25} - \sqrt{45} + 1$			
$\sqrt{2}(3 + \sqrt{2})$			
$\sqrt{5}(5 + \sqrt{2})$			
$3(3 + \sqrt{6})$			
$\sqrt{a}(\sqrt{b} + \sqrt{a})$			
$(2 + \sqrt{3})(3 + \sqrt{3})$			
$(3 + \sqrt{2})(2 - \sqrt{2})$			
$(b + \sqrt{a})(b - \sqrt{a})$			