



1. Express each of the following in the form $a\sqrt{5}$, where a is an integer,

i. $4\sqrt{15} \times \sqrt{3}$

(2)

ii. $\frac{20}{\sqrt{5}}$

(2)

iii. $5^{\frac{3}{2}}$

(2)

2. Express $(5 - \sqrt{8})(1 + \sqrt{2})$ in the form $a + b\sqrt{2}$, where a and b are integers.

(3)

3. Simplify $\frac{7+\sqrt{5}}{\sqrt{5}-1}$, giving your answer in the form $a + b\sqrt{5}$, where a and b are integers.

(3)

Solutions

1i.

$4\sqrt{15} \times \sqrt{3} = 4\sqrt{45} = 4 \times \sqrt{5} \times \sqrt{9}$	M1
$= 12\sqrt{5}$	M1

1ii.

$\frac{20}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{20\sqrt{5}}{5}$	M1
$= 4\sqrt{5}$	M1

1ii.

$5^{\frac{3}{2}} = (\sqrt{5})^3 = \sqrt{5} \times \sqrt{5} \times \sqrt{5}$	M1
$= 5\sqrt{5}$	M1

2.

$(5 - \sqrt{8})(1 + \sqrt{2}) = 5 - \sqrt{16} + 5\sqrt{2} - \sqrt{8}$	M1
$= 1 + 5\sqrt{2} - 2\sqrt{2}$	M1
$= 1 + 3\sqrt{2}$	M1

3.

$\frac{7+\sqrt{5}}{\sqrt{5}-1} \times \frac{\sqrt{5}+1}{\sqrt{5}+1}$	M1
$= \frac{7\sqrt{5} + 7 + 5 + \sqrt{5}}{5 - 1}$	M1
$= \frac{12 + 8\sqrt{5}}{4}$	
$= 3 + 2\sqrt{5}$	M1

