Surds with brackets

Name:

maths-school.co.uk

Expand and simplify the following:

a) $\sqrt{5}(3 + \sqrt{5})$

b) $\sqrt{5}(4 + \sqrt{5})$

c) $\sqrt{11}(4 - \sqrt{11})$

d) $\sqrt{6}(2 + 4\sqrt{6})$

e) $3\sqrt{5}(\sqrt{5} + 4\sqrt{7})$

f) $5\sqrt{2}(\sqrt{2} - \sqrt{5})$

g) $4\sqrt{2}(3\sqrt{2} - \sqrt{5})$

h) $5\sqrt{6}(4\sqrt{2} + \sqrt{5})$

i) $2\sqrt{3}(\sqrt{10} + 5\sqrt{5})$

Expand and simplify the following double brackets, leaving your answer in exact surd form:

a) $(3 + \sqrt{2})(3 + \sqrt{2})$

b) $(4 + \sqrt{3})(5 + \sqrt{3})$

c) $(5 + \sqrt{7})(2 + \sqrt{7})$

d) $(4 - \sqrt{5})(3 + \sqrt{5})$

e) $(4 - \sqrt{7})(5 + \sqrt{7})$

f) $(1 - \sqrt{6})(5 + \sqrt{6})$

g) $(1 + 2\sqrt{5})(7 + 2\sqrt{3})$

h) $(3 + 4\sqrt{2})(1 + 5\sqrt{3})$

i) $(5 + \sqrt{3})(4 - 6\sqrt{2})$

Exam question

Work out the area of the rectangle shown
Leave your answer in the form $a + b\sqrt{c}$
(units given in cm)

$4 + \sqrt{5}$

$2\sqrt{5}$