

Name: _____



Expand and simplify the following:

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

$3\sqrt{5} + 5$

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

$2\sqrt{6} + 24$

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

$3\sqrt{5} + 5$

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

$4\sqrt{5} + 5$

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

$15 + 12\sqrt{35}$

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

$40\sqrt{3} + 5\sqrt{12}$

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

$4\sqrt{11} - 11$

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

$10 - 5\sqrt{10}$

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

$2\sqrt{30} + 10\sqrt{15}$

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

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

$13 + 6\sqrt{2}$

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

$7 + \sqrt{5}$

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

$7 + 14\sqrt{5} + 2\sqrt{3} + 4\sqrt{15}$

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

$23 + 9\sqrt{3}$

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

$13 - \sqrt{7}$

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

$3 + 4\sqrt{2} + 15\sqrt{3} + 20\sqrt{6}$

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

$17 + 7\sqrt{7}$

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

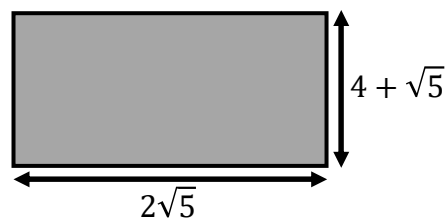
$-1 - 4\sqrt{6}$

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

$20 - 30\sqrt{2} + 4\sqrt{3} - 6\sqrt{6}$

Exam question

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



$10 + 8\sqrt{5}$

