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13 $a = \sqrt{8} + 4$

$$b = \sqrt{8} - 4$$

$(a - b)(a + b)$ can be written in the form $y\sqrt{4y}$

Find the value of y

Show your working clearly.

$$y = \dots$$

(Total for Question 13 is 3 marks)



P 6 8 7 2 9 A 0 1 7 3 2

17 Given that $8\sqrt{m} + \sqrt{49m} - \sqrt{9m} = k\sqrt{m}$
where k is an integer and m is a prime number,
(a) work out the value of k

$k = \dots$
(1)

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17 (a) Show that $(6 + 2\sqrt{12})^2 = 12(7 + 4\sqrt{3})$

Show each stage of your working.

(3)



P 5 9 7 5 6 A 0 2 1 2 8

17 (a) Express $\sqrt{675}$ in the form $n\sqrt{27}$ where n is a positive integer.

.....
(1)

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18 Given that $(8 - \sqrt{x})(5 + \sqrt{x}) = y\sqrt{x} + 21$ where x is a prime number and y is an integer,
find the value of x and the value of y .
Show each stage of your working clearly.

$x = \dots$

$y = \dots$

(Total for Question 18 is 3 marks)



18 Solve $\sqrt{3}(x - 2\sqrt{3}) = x + 2\sqrt{3}$

Give your answer in the form $a + b\sqrt{3}$ where a and b are integers.
Show your working clearly.

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$x = \dots$

(Total for Question 18 is 4 marks)



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23 Simplify $\frac{30 \times 25^{2x+7}}{\sqrt{180} \times (\sqrt{5})^{4x+9}}$

Give your answer in the form 5^w where w is an expression in terms of x
Show each stage of your working clearly.

(Total for Question 23 is 3 marks)



P 7 3 9 9 4 A 0 2 3 2 8