1 Show that  $\frac{\sqrt{8}}{\sqrt{8}-2}$  can be written in the form  $n+\sqrt{n}$ , where *n* is an integer.

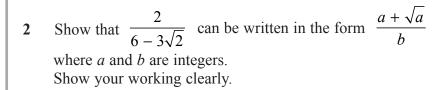
Show your working clearly.

(3)

(b) Show that  $\frac{\sqrt{20} + \sqrt{80}}{\sqrt{3}}$  can be expressed in the form  $\sqrt{a}$  where a is an integer.

Show your working clearly.

(3)



(3)

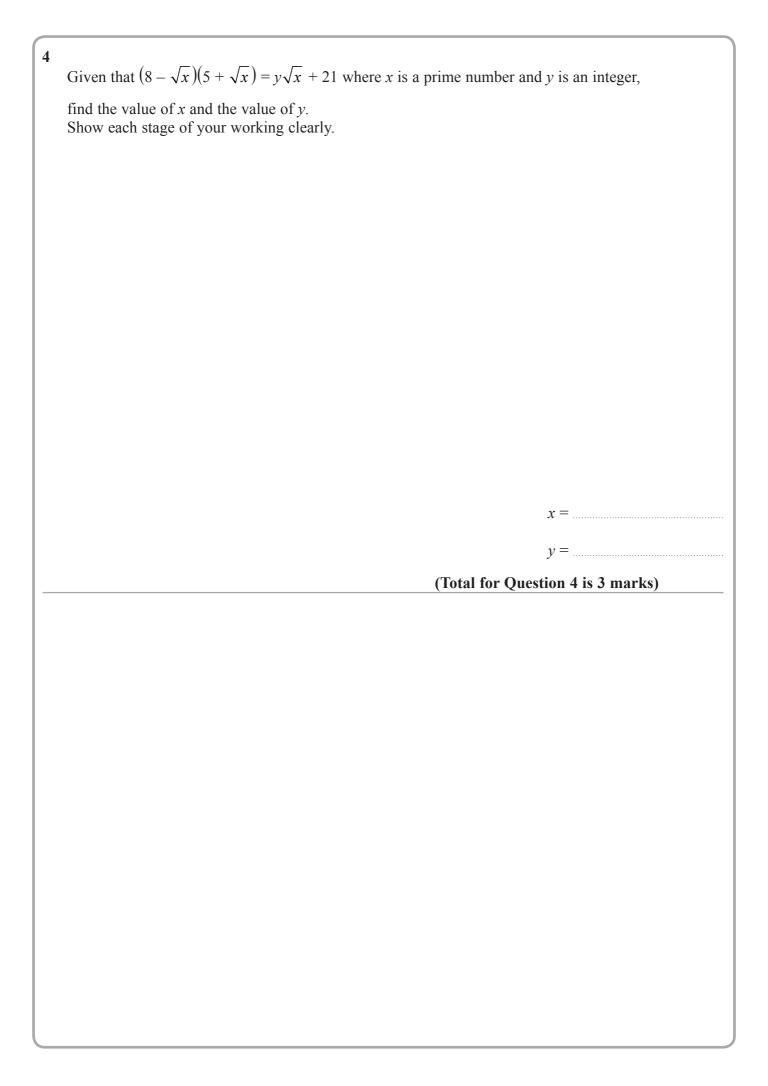
Given that *y* is a prime number,

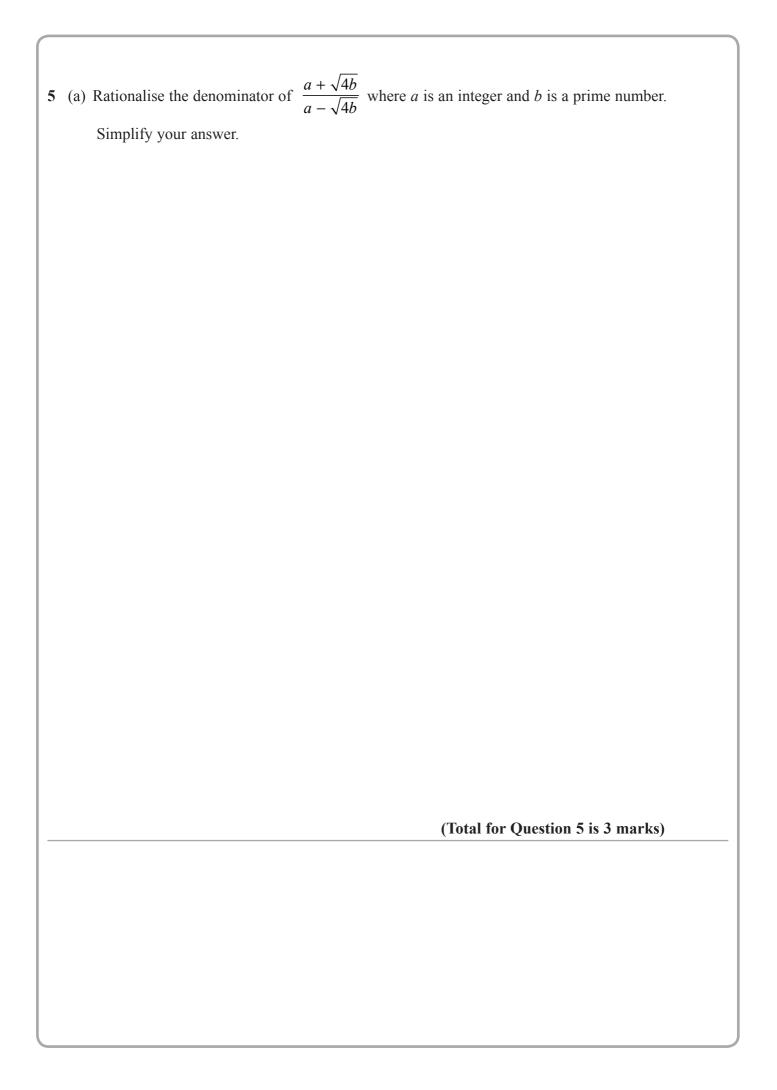
(b) express  $\frac{3}{2-\sqrt{y}}$  in the form  $\frac{a+b\sqrt{y}}{c-y}$  where a, b and c are integers.

(2)

(Total for Question 2 is 5 marks)

3  $a = \sqrt{8} + 4$  $b = \sqrt{8} - 4$ (a-b)(a+b) can be written in the form  $y\sqrt{4y}$ Find the value of *y* Show your working clearly. *y* = ..... (Total for Question 13 is 3 marks)





_	
6	
v	

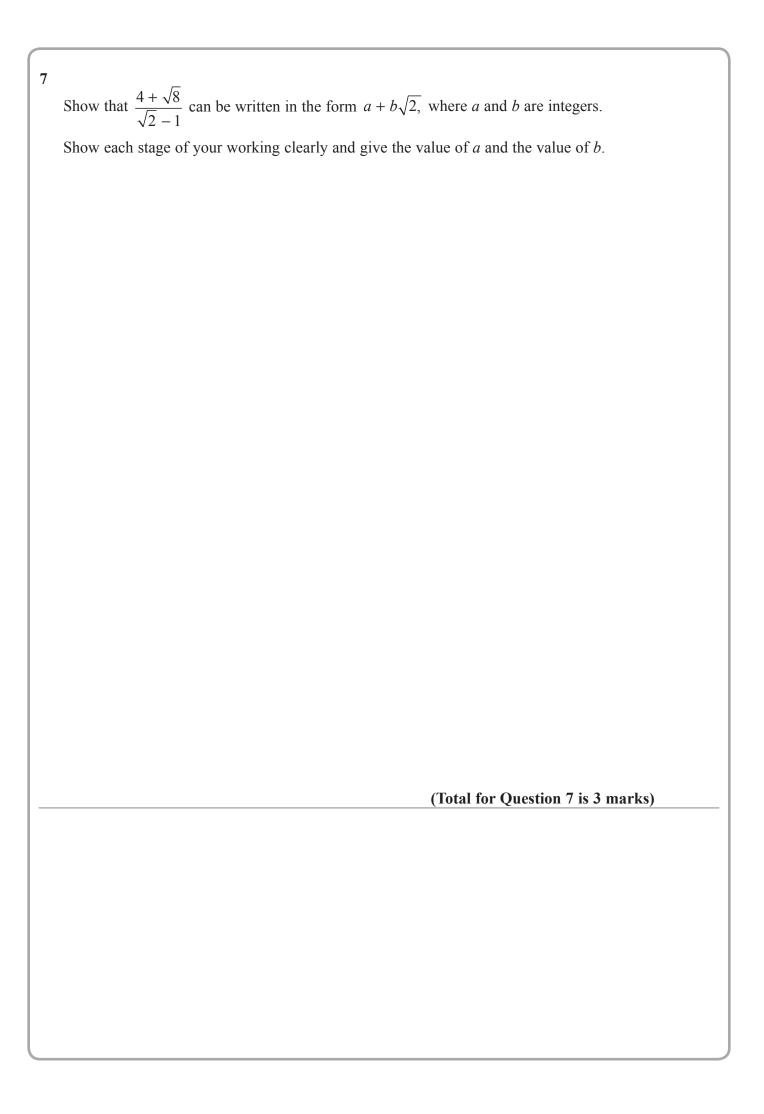
(a) Show that  $(6 + 2\sqrt{12})^2 = 12(7 + 4\sqrt{3})$ Show each stage of your working.

(3)

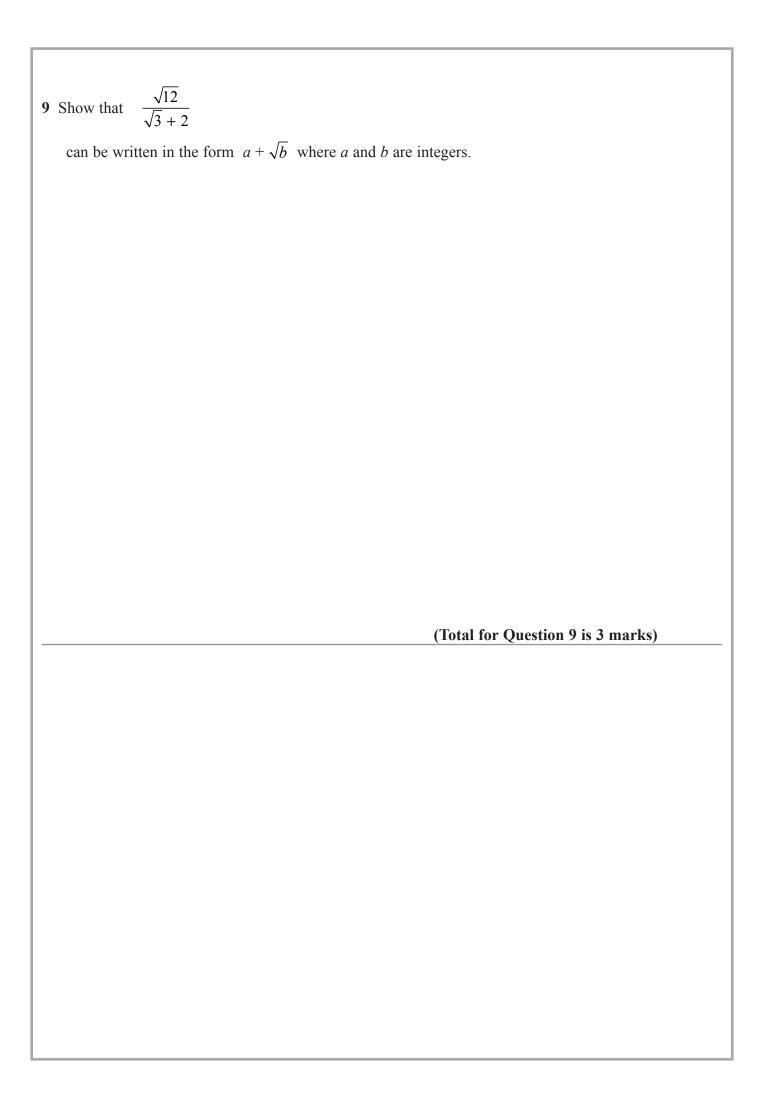
**(b)** Without using a calculator, rationalise the denominator of  $\frac{6}{3-\sqrt{7}}$ 

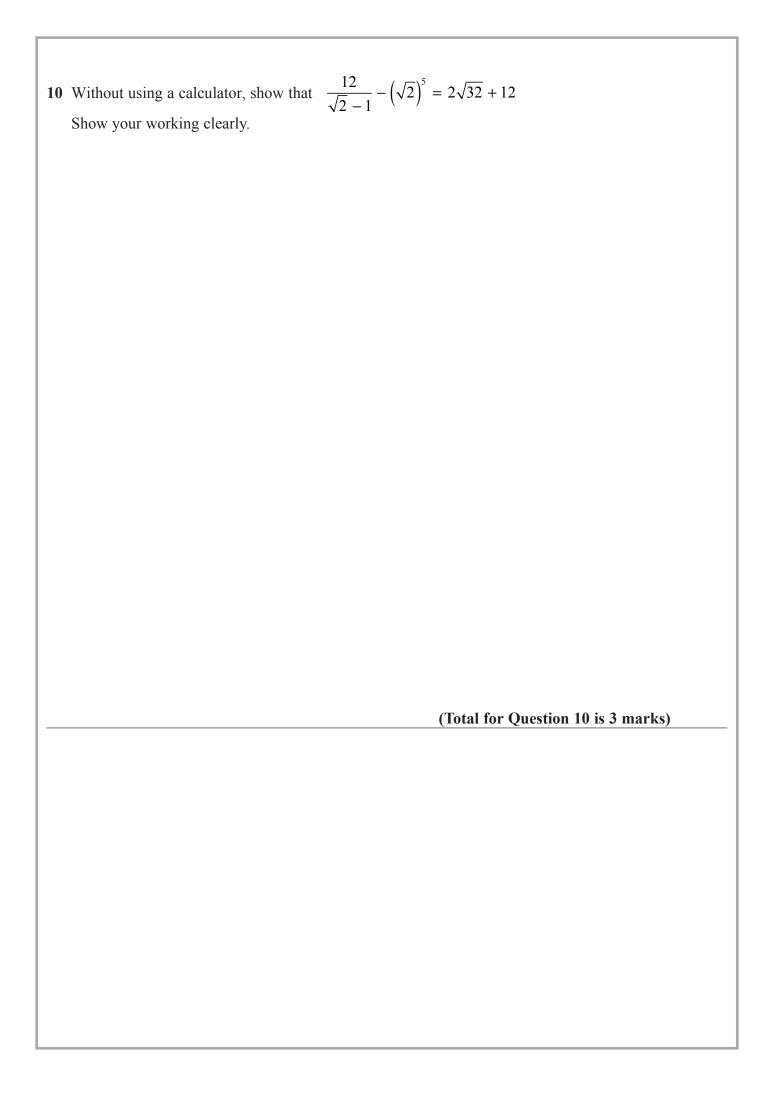
Simplify your answer.

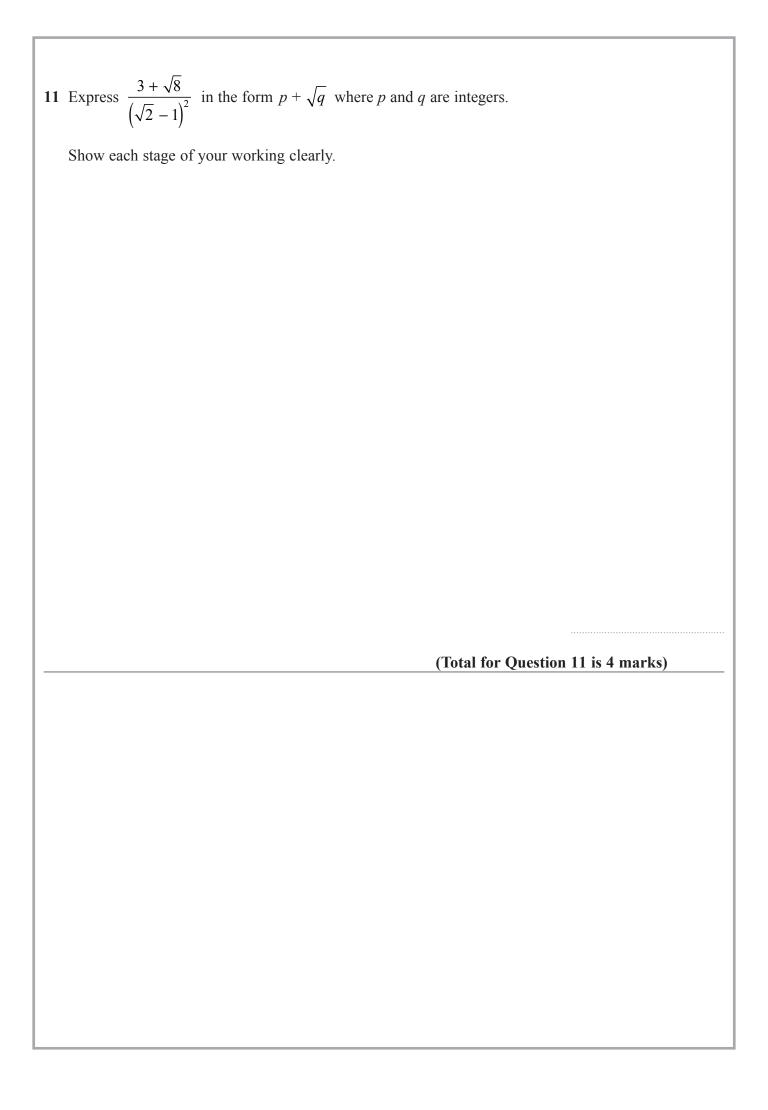
You must show each stage of your working.

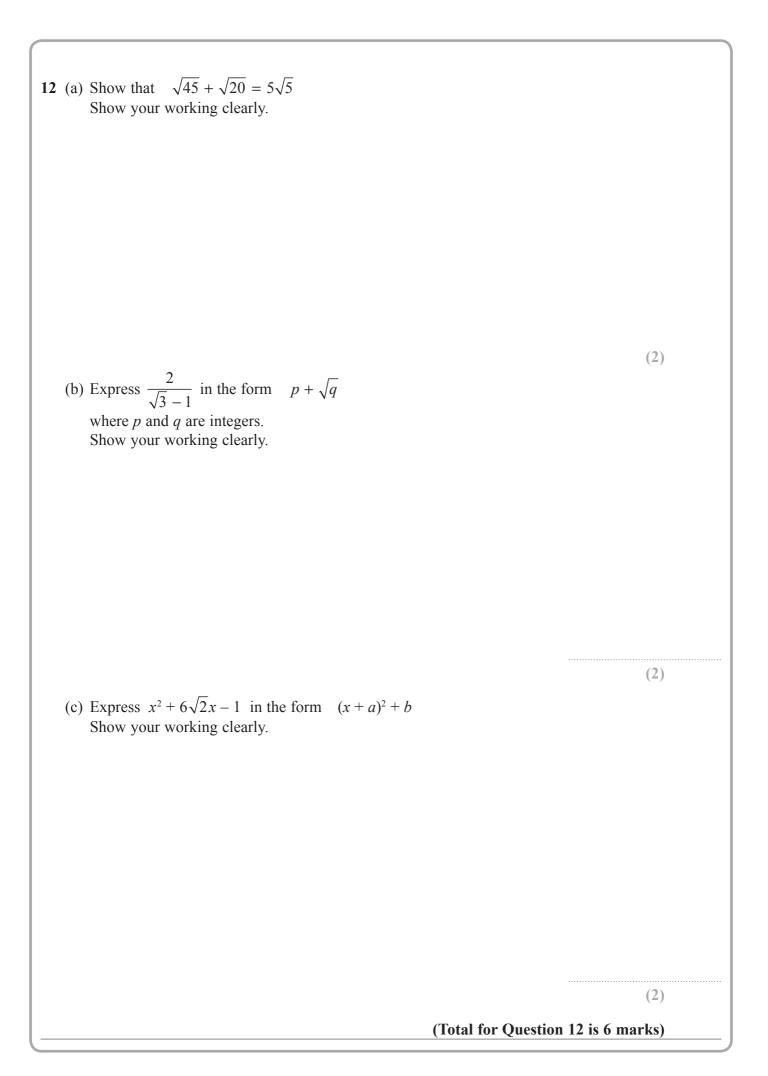


8 Express $\frac{8}{\sqrt{5}-1}$ in the form $\sqrt{a}+b$ where a and b are integers.			
Show each stage of your working clearly.			
(Total for Overtion 9 is 2 marks)			
(Total for Question 8 is 3 marks)			









13 The area of a rectangle is 18 cm <sup>2</sup>			
The length of the rectangle is $(\sqrt{7} + 1)$ cm.			
Without using a calculator and showing each stage of your working,			
find the width of the rectangle. Give your answer in the form $a\sqrt{b} + c$ where $a$ , $b$ and $c$ are integers.			
	cm		
(Total for Question 13 is	3 marks)		