

1. Evaluate.

(a)  $\sqrt{3} \times \sqrt{12}$

.....

Answer .....

(2)

(b)  $\sqrt{3} \div \sqrt{12}$

.....

Answer .....

(2)

(c)  $(\sqrt{3})^6$

.....

Answer .....

(2)

**(Total 6 Marks)**

2. Show that  $(\sqrt{32} + \sqrt{2})^2 = 50$

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.....

(2)

**(Total 2 marks)**

3. (a) Express  $\sqrt{5} + \sqrt{20}$  in the form  $p\sqrt{5}$

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.....

Answer .....

(2)

(b) Hence, or otherwise, simplify fully  $\frac{\sqrt{5} + \sqrt{20}}{\sqrt{45} - \sqrt{20}}$

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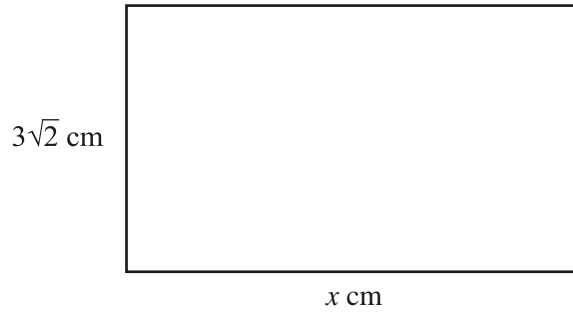
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Answer .....

(3)

**(Total 5 marks)**

4. The area of this rectangle is  $30 \text{ cm}^2$ .



Find the value of  $x$ , writing your answer in the form  $a\sqrt{b}$  where  $a$  and  $b$  are integers.

.....  
 .....  
 .....

Answer .....cm  
**(Total 3 marks)**

5. (a) Write  $\sqrt{600} + \sqrt{54}$  in the form  $p\sqrt{6}$  where  $p$  is an integer.

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Answer .....  
**(2)**

- (b) Hence write  $\frac{\sqrt{600} + \sqrt{54}}{\sqrt{338}}$  in the form  $\sqrt{q}$ .

You may use  $338 = 2 \times 13^2$

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 .....

Answer .....  
**(2)**  
**(Total 4 marks)**

6. (a) Simplify fully  $\sqrt{2}(\sqrt{8}-\sqrt{2})$

.....  
 .....  
 .....

Answer .....

(2)

(b) Given that  $x=\sqrt{2}$        $y=\sqrt{5}$        $z=\sqrt{10}$

work out the value of  $\frac{y}{xz}$

Write your answer in its simplest form.

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 .....  
 .....  
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Answer .....

(2)

**(Total 4 marks)**

7. (a) Find the value of  $m$  when  $\sqrt{75}-\frac{9}{\sqrt{3}}=m\sqrt{3}$

.....  
 .....  
 .....

Answer  $m =$  .....

(3)

(b) Given that  $r=\sqrt{6}$ ,  $s=\sqrt{8}$  and  $t=\sqrt{12}$

(i) Simplify fully,  $\frac{t}{rs}$

.....  
 .....  
 .....  
 .....

Answer .....

**(Total 2 marks)**