

1. Write each of these in the form $p\sqrt{3}$, where p is an integer.

(a) $\sqrt{6} \times \sqrt{50}$

.....

Answer

(2)

(b) $\sqrt{48} + \sqrt{75}$

.....

Answer

(2)

(c) $\frac{18}{\sqrt{3}}$

.....

Answer

(2)

(Total 6 marks)

2. (a) Simplify fully $\sqrt{75} + \sqrt{27}$

You **must** show your working.

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.....

.....

Answer

(2)

(b) Rationalise the denominator and simplify $\frac{21}{\sqrt{7}}$

.....

.....

.....

Answer

(2)

(Total 4 marks)

3. (a) Simplify $\sqrt{18} + \sqrt{32}$

.....

Answer

(2)

(b) Rationalise $\frac{1}{\sqrt{6}}$

.....

Answer

(1)

(Total 3 marks)

4. Show that $\sqrt{12}(\sqrt{75} - \sqrt{48}) = 6$

.....

(Total 3 marks)

5. (a) Rationalise and simplify $\frac{1}{\sqrt{8}}$

.....

Answer

(2)

(b) By simplifying $\sqrt{12} + \sqrt{108}$,

write $\frac{\sqrt{12} + \sqrt{108}}{\sqrt{8}}$

in the form $a\sqrt{b}$ where a and b are integers.

.....

Answer

(3)

(Total 5 marks)

6. Simplify fully $\frac{\sqrt{150} - \sqrt{6}}{\sqrt{12}}$

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.....
.....

Answer

(Total 4 marks)

7. Work out $2\sqrt{3}(\sqrt{3} + \sqrt{8})$

Give your answer in the form $a + b\sqrt{6}$ where a and b are integers.

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

Answer

(Total 3 marks)

8. (a) By rationalising the denominator, simplify $\frac{15}{\sqrt{5}}$

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.....

Answer

(2)

(b) Show that $(\sqrt{3} + \sqrt{12})^2 = 27$

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.....
.....

(2)
(Total 4 marks)

9. (a) Rationalise the denominator and simplify fully $\frac{1}{\sqrt{12}}$

.....

Answer

(2)

- (b) By simplifying $\sqrt{32} - \sqrt{18}$,
 write $\sqrt{3}(\sqrt{32} - \sqrt{18})$
 in its simplest form.

.....

Answer

(3)

(Total 8 marks)

10. (a) You are given that $\sqrt{12} + \sqrt{27} = a\sqrt{3}$ where a is an integer.
 Find the value of a .

.....

Answer

(2)

- (b) Simplify $\sqrt{8} + \sqrt{50}$

.....

Answer

(2)

(Total 4 marks)