

1 Write $\sqrt{48}$ in the form $k\sqrt{3}$, where k is an integer.

.....
(Total for question 1 is 2 marks)

2 Write $\sqrt{50}$ in the form $k\sqrt{2}$, where k is an integer.

.....
(Total for question 2 is 2 marks)

3 Write $5\sqrt{27}$ in the form $k\sqrt{3}$, where k is an integer.

.....
(Total for question 3 is 2 marks)

4 Write $7\sqrt{20}$ in the form $k\sqrt{5}$, where k is an integer.

.....
(Total for question 4 is 2 marks)

5 Expand and Simplify $(2 + \sqrt{3})(2 - \sqrt{3})$

.....
(Total for question 5 is 2 marks)

6 Write $(3 + \sqrt{5})^2$ in the form $a + b\sqrt{5}$, where a and b are integers.

.....
(Total for question 6 is 2 marks)

7 Expand and Simplify $(2 + \sqrt{5})(1 - \sqrt{5})$

.....
(Total for question 7 is 2 marks)

8 Write $(3 - \sqrt{2})^2$ in the form $a + b\sqrt{2}$, where a and b are integers.

.....
(Total for question 8 is 2 marks)

9 Expand and Simplify $(2 + \sqrt{3})^2 - (2 - \sqrt{3})^2$

.....
(Total for question 9 is 2 marks)

10 Rationalise the denominator $\frac{6}{\sqrt{3}}$

.....
(Total for question 10 is 2 marks)

11 Rationalise the denominator $\frac{x}{\sqrt{x}}$

.....
(Total for question 11 is 2 marks)

12 Rationalise the denominator $\frac{1 + \sqrt{5}}{\sqrt{2}}$

.....
(Total for question 12 is 2 marks)

13 Simplify $\frac{(3+\sqrt{6})}{\sqrt{3}}$

(Total for question 13 is 3 marks)

14 Simplify fully $\frac{(4+2\sqrt{3})(4-2\sqrt{3})}{\sqrt{11}}$

You must show all your working.

(Total for question 14 is 3 marks)

15 Show that $\frac{5 + 2\sqrt{3}}{2 + \sqrt{3}}$ can be written as $4 - \sqrt{3}$

(Total for question 15 is 3 marks)

16 Show that $\frac{3\sqrt{3} + 3}{3 + \sqrt{3}}$ can be written as $\sqrt{3}$

(Total for question 16 is 3 marks)

17 Show that $\frac{1}{\frac{1}{\sqrt{2}} + \sqrt{2}}$ can be written as $\frac{\sqrt{2}}{3}$

(Total for question 17 is 3 marks)

18 Show that $\frac{2}{\frac{1}{\sqrt{3}} + 1}$ can be written as $3 - \sqrt{3}$

(Total for question 18 is 3 marks)

19 Simplify fully $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})$

(Total for question 19 is 2 marks)

20 Simplify fully $(2a + \sqrt{b})^2$

(Total for question 20 is 2 marks)