Lite GCSE Maths

Surds

Name:

Class:

Author:

Date:

Time: 31

Marks: 26

Comments:

Q1. (a) Simplify fully $\sqrt{2}(\sqrt{8}-\sqrt{2})$

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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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Answer .....

(2)
(Total 4 marks)

Q2. (a) Simplify fully $\sqrt{75}+\sqrt{27}$

You **must** show your working.

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Answer .....

(2)

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

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Answer .....

(2)

(Total 4 marks)

Q3. Show that $\left(\sqrt{50} - \sqrt{2}\right)^2$ is an integer.

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(Total 2 marks)

Q4. Write each of these in the form $p\sqrt{3}$, where p is an integer.

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

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Answer .....

(2)

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

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Answer .....

(2)

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

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Answer .....

(2)
(Total 6 marks)

Q5. (a) Work out the Highest Common Factor (HCF) of 42 and 98.

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Answer .....

(2)

(b) Write $\sqrt{99} + \sqrt{44}$ in the form $a\sqrt{b}$ where a and b are integers.

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Answer .....

(2)
(Total 4 marks)

Q6. (a) Simplify $(9 + \sqrt{7})(9 + \sqrt{7})$

Give your answer in the form $a + b\sqrt{7}$

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Answer .....

(2)

(b) Prove that $\frac{\sqrt{12}+6}{\sqrt{3}} \equiv 2\left(1+\sqrt{3}\right)$

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(4)
(Total 6 marks)