



THIRD SPACE
LEARNING

GCSE Exam Questions

Adding and Subtracting Surds |
Number

GCSE Exam Questions: Adding and Subtracting Surds

- 1) (a) Express $\sqrt{7} + \sqrt{63}$ in the form $a\sqrt{7}$ where a is an integer to be found.

(2)

- (b) Express $6\sqrt{5} - \sqrt{20}$ in the form $a\sqrt{5}$ where a is an integer to be found.

(2)
(4 marks)

- 2) Simplify fully $\sqrt{96} + \sqrt{24}$.

(3 marks)

- 3) Simplify fully $\sqrt{75} - \sqrt{27}$.

(3 marks)

- 4) Simplify fully:

$$\sqrt{52} + \sqrt{\frac{13}{4}}$$

Write your answer in the form $\frac{a\sqrt{13}}{b}$, where a and b are integers to be found.

(3 marks)

GCSE Exam Questions: Adding and Subtracting Surds Answers

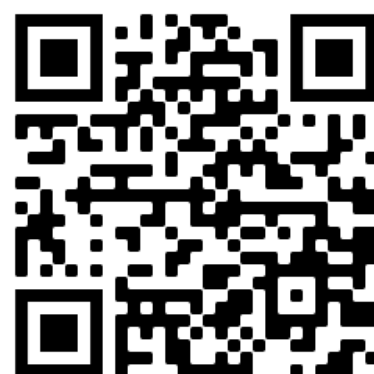
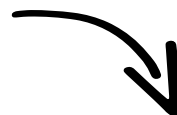
| | Question | Answer | Marks |
|--------|--|---|-------|
| 1) (a) | Express $\sqrt{7} + \sqrt{63}$ in the form $a\sqrt{7}$ where a is an integer to be found. | (a) $\sqrt{63} = 3\sqrt{7}$ | (1) |
| | | $\sqrt{7} + 3\sqrt{7} = 4\sqrt{7}, a = 4$ | (1) |
| (b) | Express $6\sqrt{5} - \sqrt{20}$ in the form $a\sqrt{5}$ where a is an integer to be found. | (b) $\sqrt{20} = 2\sqrt{5}$ | (1) |
| | | $6\sqrt{5} - 2\sqrt{5} = 4\sqrt{5}, a = 4$ | (1) |
| 2) | Simplify fully $\sqrt{96} + \sqrt{24}$. | $\sqrt{96} = 4\sqrt{6}$ | (1) |
| | | $\sqrt{24} = 2\sqrt{6}$ | (1) |
| | | $4\sqrt{6} + 2\sqrt{6} = 6\sqrt{6}$ | (1) |
| 3) | Simplify fully $\sqrt{75} - \sqrt{27}$. | $\sqrt{75} = 5\sqrt{3}$ | (1) |
| | | $\sqrt{27} = 3\sqrt{3}$ | (1) |
| | | $5\sqrt{3} - 3\sqrt{3} = 2\sqrt{3}$ | (1) |
| 4) | Simplify fully: $\sqrt{52} + \sqrt{\frac{13}{4}}$ <p>Write your answer in the form $\frac{a\sqrt{13}}{b}$, where a and b are integers to be found.</p> | $\sqrt{52} = 2\sqrt{13}$ | (1) |
| | | $\sqrt{\frac{13}{4}} = \frac{\sqrt{13}}{2}$ | (1) |
| | | $2\sqrt{13} + \frac{\sqrt{13}}{2} = \frac{5\sqrt{13}}{2}$ | (1) |

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