

SIMPLIFYING SURDS

Use the first fifteen square numbers to help you simplify these surds

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 255

Using non-square factors in this process is not the most efficient way to simplify these surds.

For example $\sqrt{20} = \sqrt{2} \times \sqrt{10}$ is not a simplification (neither number is square)

$\sqrt{20} = \sqrt{4} \times \sqrt{5}$ is used since 4 IS a square number (integer root)

$= 2\sqrt{5}$ is the solution.

Now try these

1. $\sqrt{8}$ 2. $\sqrt{12}$ 3. $\sqrt{18}$ 4. $\sqrt{20}$ 5. $\sqrt{24}$

6. $\sqrt{32}$ 7. $\sqrt{27}$ 8. $\sqrt{50}$ 9. $\sqrt{45}$ 10. $\sqrt{72}$

11. $\sqrt{40}$ 12. $\sqrt{54}$ 13. $\sqrt{48}$ 14. $\sqrt{75}$ 15. $\sqrt{96}$

16. $\sqrt{98}$ 17. $\sqrt{128}$ 18. $\sqrt{80}$ 19. $\sqrt{200}$ 20. $\sqrt{288}$

21. $\sqrt{125}$ 22. $\sqrt{63}$ 23. $\sqrt{108}$ 24. $\sqrt{300}$ 25. $\sqrt{288}$

1. $2\sqrt{2}$	2. $2\sqrt{3}$	3. $3\sqrt{2}$	4. $2\sqrt{5}$	5. $2\sqrt{6}$
6. $4\sqrt{2}$	7. $3\sqrt{3}$	8. $2\sqrt{5}$	9. $3\sqrt{5}$	10. $6\sqrt{2}$
11. $2\sqrt{10}$	12. $3\sqrt{6}$	13. $4\sqrt{3}$	14. $5\sqrt{5}$	15. $4\sqrt{6}$
16. $7\sqrt{2}$	17. $8\sqrt{2}$	18. $4\sqrt{5}$	19. $2\sqrt{10}$	20. $2\sqrt{7}$
21. $5\sqrt{5}$	22. $3\sqrt{7}$	23. $6\sqrt{3}$	24. $3\sqrt{10}$	25. $12\sqrt{2}$