Surds: Simplifying & Rationalising (Grade 11)

WORKSHEET

Name: ..... Class: .....

Date: .....

MARK ____ / 34

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 Simplify $\sqrt{72}$ (2)

2 Simplify $\sqrt{50}$ (2)

3 Simplify $\sqrt{98}$ (2)

4 Simplify $\sqrt{12} + \sqrt{27}$ (2)

5 Simplify $3\sqrt{2} + \sqrt{50}$ (2)

6 Simplify $\sqrt{5} \times \sqrt{20}$ **(2)**

7 Expand $(\sqrt{3} + 2)(\sqrt{3} - 5)$ **(3)**

8 Rationalise $\frac{6}{\sqrt{3}}$ **(2)**

9 Rationalise $\frac{1}{\sqrt{5}}$ **(2)**

10 Rationalise $\frac{4}{1 + \sqrt{2}}$ **(3)**

11 Solve for x: $\sqrt{x-4} = 5$ **(3)**

12 Solve for x: $2\sqrt{x} + 1 = 9$ **(3)**

13 Solve for x: $\sqrt{x+6} = x$, and reject any invalid answer with a reason. **(4)**

14 Explain why $\sqrt{x+1} = -3$ has no solution. **(2)**

TOTAL: 34 marks

© Danemathics — free to print and share for classroom use.