

Lesson 1: Practice Task

Have a go at the following questions. *Do not use a calculator for this task.*

1) Which of the following is a rational number?

- (a) π (b) $\sqrt{48}$
(c) $\sqrt{3}$ (d) $\sqrt{36}$

2) Write $\sqrt{540}$ in terms of the simplest possible surd.

3) Which of the following is a correct simplification of $\sqrt{2} + 1 - 2\sqrt{3} + 4\sqrt{2} - 3$

- (a) $3\sqrt{2} - 2$ (b) $5\sqrt{2} - 2\sqrt{3} - 2$
(c) $3\sqrt{7} - 2$ (d) $\sqrt{7}$

4) Simplify $\sqrt{75} - \sqrt{27}$

5) Simplify $\sqrt{12} \times \sqrt{8} \times \sqrt{98}$

6) Multiply out $(2 - \sqrt{3})(1 + 2\sqrt{3})$ and simplify as far as possible

7) Which of the following expressions are equal to $\frac{\sqrt{20}}{\sqrt{5}+1}$? Choose as many as

apply.

- (a) $\frac{4\sqrt{5}}{\sqrt{5}+1}$ (b) $\frac{5+\sqrt{5}}{2}$
(c) $\frac{5-\sqrt{5}}{2}$ (d) $\frac{10}{5+\sqrt{5}}$

8) Write $\frac{2}{3\sqrt{2}}$ in the form $\frac{a}{b}\sqrt{2}$.

9) Write $\frac{1}{\sqrt{5}-2}$ in the form $\frac{a\sqrt{5}+b}{c}$

10) The expression $\frac{2+\sqrt{3}}{1+\sqrt{2}}$ is equivalent to

- (a) 5 (b) $2\sqrt{2} + \sqrt{6} - \sqrt{3} - 2$
(c) $2 + \sqrt{3} - 2\sqrt{2} - \sqrt{6}$ (d) $\frac{2+\sqrt{3}}{5}$