



QUESTION WORKBOOK

Indices and surds

Algebra and functions · Year 12–13

7 questions · 22 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

A1 Evaluate $16^{3/4}$, 5^0 and 4^{-2} without a calculator. [3]

A2 Write $\sqrt{72}$ in the form $k\sqrt{2}$. [2]

SECTION B · Standard

B1 Evaluate $8^{-2/3}$ and $25^{3/2}$ without a calculator. [3]

B2 Simplify $\sqrt{50} + \sqrt{32} - \sqrt{18}$. [3]

B3 Express $5/\sqrt{5}$ and $4/\sqrt{6}$ with rational denominators, in simplest form. [3]

B4 Express $10/(\sqrt{6} - 2)$ in the form $a\sqrt{6} + b$, where a and b are integers. [3]

SECTION C · Stretch

C1 Given that $2^x = 8^{y+1}$ and $9^y = 3^{x-9}$, find the value of x and the value of y . [5]