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A LEVEL MATHS

(1) Indices

WORKING AT D/E

(1) Simplify $6p^{\frac{1}{3}} \times 12p^{\frac{1}{2}}$

(2) Expand and simplify $x^2\left(2x - \frac{y}{x}\right)$

(3) Simplify $8^{\frac{-1}{3}}$ without a calculator

WORKING AT B/C

(1) Simplify $\dfrac{2x^5 + 12x^{\frac{1}{5}}}{6x}$

(2) Solve the equation $25^{3-x} = 125^{x+1}$

(3) Without a calculator, simplify $\left(1\frac{9}{16}\right)^{-0.5}$

WORKING AT A*/A

(1) Write $\left(\dfrac{x^{\frac{1}{3}}}{16\sqrt{x}}\right)^{\frac{3}{4}}$ as a simplified power of x.

(2) Write $\left(\left(3x^{\frac{1}{2}}\right)^2 \times (4x^2)^2\right)^{\frac{1}{2}}$ in the form Ax^B

where A is an integer and B is a rational fraction.

(3) The first and third terms of a geometric sequence are $2x^{\frac{2}{3}}$ and $8x^{\frac{16}{15}}$. What is the 2nd term?