

## Powers and Roots Revision

<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>
Write down the cube root of 27  $3$	Work out $3^5 - \sqrt{441}$  $322$	Write down the value of $5^0$  $1$	Simplify $y^5 \times y^4$  $y^9$
<b>(e)</b>	<b>(f)</b>	<b>(g)</b>	<b>(h)</b>
Simplify $(x^{-3})^5$  $x^{-15}$	Write as a power of 2 $\frac{2^{12}}{2^3}$  $2^9$	Simplify $(3a^2b^4)^3$  $27a^6b^{12}$	Simplify $\frac{a^5 \times a^2}{a^{-3}}$  $a^{10}$
<b>(i)</b>	<b>(j)</b>	<b>(k)</b>	<b>(l)</b>
Write $2\sqrt{2}$ as a single power of 2  $2^{3/2}$	Evaluate $\left(\frac{4}{9}\right)^{3/2}$  $\frac{8}{27}$	Evaluate $8^{-4/3}$  $\frac{1}{16}$	$\frac{4^{10} \times 4^x}{4^6} = 4^{-1}$ Find the value of $x$ .  $x = -5$
<b>(m)</b>	<b>(n)</b>	<b>(o)</b>	<b>(p)</b>
$\frac{2^{10}}{64} = 2^n$ Find the value of $n$ .  $n = 4$	Write $\frac{1}{\sqrt[3]{4}}$ as a single power of 2  $2^{-2/3}$	$4^a = 16 \times 8^{2a}$ Find the value of $a$ .  $a = -1$	Given that $9^x = (27^a)^{1/2} \times 3^b$ find an expression for $x$ in terms of $a$ and $b$ .  $x = \frac{3}{4}a + \frac{1}{2}b$