



**Post-Teach Diagnostic: Surds – calculator NOT allowed**

Q1) Identify the square number:

A	B	C	D	E
23	24	25	26	27

Q2) Find the answer to  $\sqrt{196}$  :

A	B	C	D	E
15	14	16	12	11

Q3) Express 420 as a product of its prime factors:

A	B	C	D	E
$7 \times 5 \times 3 \times 2$	$5 \times 3^3 \times 8$	$2^2 \times 3 \times 5 \times 7$	$3^3 \times 7^2$	$5 \times 3^3 \times 7^2$

Q4) Find the HCF of 26 and 52

A	B	C	D	E
8	26	13	4	676

Q5) Fully simplify  $\sqrt{220}$  :

A	B	C	D	E
$4\sqrt{55}$	$22\sqrt{10}$	$20\sqrt{11}$	$2\sqrt{55}$	Cannot be simplified

Q6) Fully simplify  $\sqrt{8} \times \sqrt{8}$  :

A	B	C	D	E
$\sqrt{64}$	$\sqrt{16}$	$\sqrt{8}$	8	Cannot be simplified

Q7) Fully simplify  $\sqrt{40} \div \sqrt{4}$  :

A	B	C	D	E
10	$\sqrt{10}$	$2\sqrt{5}$	44	Cannot be simplified

Q8) Rewrite  $\frac{1}{\sqrt{8}}$  :

A	B	C	D	E
$8\sqrt{8}$	$\frac{\sqrt{8}}{8}$	$\sqrt{8}$	8	Cannot rewrite





Q9) Fully simplify  $\sqrt{12} + \sqrt{48}$  :

A	B	C	D	E
60	$\sqrt{60}$	$6\sqrt{3}$	$6\sqrt{10}$	Cannot be simplified

Q10) Fully simplify  $\sqrt{125} - \sqrt{80}$  :

A	B	C	D	E
$\sqrt{45}$	$\sqrt{5}$	$3\sqrt{15}$	$15\sqrt{3}$	Cannot be simplified

Q11) Fully simplify  $\sqrt{5}(\sqrt{4} - \sqrt{8})$  :

A	B	C	D	E
$-5\sqrt{4}$	$\sqrt{1}$	$\sqrt{20} - \sqrt{40}$	$2\sqrt{5} - 2\sqrt{10}$	Cannot be simplified

Q12) Fully simplify  $(4 - \sqrt{5})^2$  :

A	B	C	D	E
1	$16\sqrt{9}$	$21 - 8\sqrt{5}$	$-\sqrt{5}$	Cannot be simplified

Q13) Fully simplify  $\frac{(4-\sqrt{3})(4+\sqrt{3})}{\sqrt{13}}$  :

A	B	C	D	E
$\sqrt{13}$	$\sqrt{3}$	3	16	Cannot be simplified

Q14) Rationalise the denominator:  $\frac{7}{\sqrt{15}}$

A	B	C	D	E
$\sqrt{15}$	$\frac{7\sqrt{15}}{\sqrt{15}}$	$\frac{7\sqrt{15}}{15}$	105	Cannot be rationalised

Q15) Rationalise the denominator:  $\frac{7}{3-\sqrt{5}}$

A	B	C	D	E
$\frac{14 + 3\sqrt{5}}{5}$	$\frac{21 + 7\sqrt{5}}{4}$	$\frac{3 + \sqrt{5}}{2}$	$\frac{7 + 2\sqrt{5}}{7}$	Cannot be rationalised

