Scale Factor Past Paper Answers GCSE Edexcel - Calculator

1.

$3 : 10$	P1	process to find ratio of lengths $\mathbf{A}{:}\mathbf{B} = \sqrt{4}{:}\sqrt{25}$ $(= 2{:}5$ or $\frac{2}{5}$ or $2, 5)$	Accept working in fractions for the award of process marks but the final answer must be in correct simplified ratio notation
	P1	for process to find ratio of lengths $\mathbf{B}{:}\mathbf{C} = \sqrt[3]{27}{:}\sqrt[3]{64}$ $(= 3{:}4$ or $\frac{3}{4}$ or $3, 4)$	
	P1	for process to write as one ratio eg. finding a common multiple of 3 and 5 **or** 6 : 15 : 20 oe	
	A1	cao	

2.

6.50	M1	for method to find ratio or scale factor of lengths or volumes eg $\sqrt{3} : 2$ or $1 : 1.15(47....)$ or $0.86(60\ldots) : 1$ or $\sqrt{27} : 8$ oe	Scale factors may just be seen as $1.15...$, $0.86...$etc
	M1	for complete method to find ratio of volumes and use to find required volume eg $10 \div ("1.15...")^3$ or $10 \times ("0.86...")^3$	
	A1	for answer in the range 6.49 to 6.53	If an answer is given within the range then incorrectly rounded to 3 sig figs, award full marks. Accept 6.5

3.

Shown	M1	for $\sqrt[3]{\frac{8}{27}}$ $(= \frac{2}{3})$ or $\sqrt[3]{\frac{27}{8}}$ $(= \frac{3}{2})$ or $2 : 3$ or $3 : 2$
	M1	for $\left(\sqrt[3]{\frac{8}{27}}\right)^2$ $(= \frac{4}{9})$ or $\left(\sqrt[3]{\frac{27}{8}}\right)^2$ $(= \frac{9}{4})$ or $4 : 9$ or $9 : 4$
	A1	132 from correct arithmetic

4.

	Given result	M1	For length scale factor eg $\sqrt{\dfrac{4}{9}}$ **or** 120 : 405
		M1	$\left(\sqrt{\dfrac{4}{9}}\right)^{3} \times 405$ **or** $2^{3} : 3^{3}$ (from 120 : 405)
		A1	120 from correct arithmetic **or** conclusion relating $2^{3} : 3^{3}$ with $2^{2} : 3^{2}$ with correct working

5.

(a)		7.5	2	M1 for sight of $\dfrac{9}{6}$ (=1.5) oe or $\dfrac{6}{9}$ (=0.66..) oe or $\dfrac{5}{6}$ (=0.83..) oe or $\dfrac{6}{5}$ (=1.2) oe or a ratio, eg 6:9 oe or decimal, eg 1.5 oe A1 cao
(b)		8	2	M1 for $12 \times \dfrac{6}{9}$ oe or $12 \div \dfrac{9}{6}$ oe or $\dfrac{12}{"7.5"} \times 5$ oe A1 cao