1 (a)		3.9	M1	for a ratio of $\frac{8.1}{5.4}$ (=1.5) oe or $\frac{5.4}{8.1}$ (=0.66..) oe or $\frac{2.6}{5.4}$ (= 0.48..) oe or $\frac{5.4}{2.6}$ (= 2.07..) oe
			A1	cao
(b)		2.05	M1	for $\frac{5.4}{8.1} \times$ 6.15 oe (= 4.1) or $\frac{2.7}{8.1} \times$ 6.15 oe or ft "scale factor" from (a)
			A1	cao

2		2, 14.5	P1	for scale factor of $\frac{12}{3}$ or $\frac{3}{12}$ or $\frac{15}{12}$ or $\frac{12}{15}$ or $\frac{8}{12}$ or $\frac{12}{8}$ or $\frac{15}{8}$ oe or correctly identifies 2 pairs of corresponding sides
			A1	for x=2
			P1	for complete method to find other value for x eg $\frac{15}{8} \times 12 - 8$
			A1	for x = 14.5
			C1	Describes both assumptions for similarity

3 (a)	Proof	C1	for starting the proof, identifying a pair of relevant equal sides or angles with reasons from $AD = BC$ (opposite sides of a parallelogram are equal) angle PAD = angle QCB (opposite angles of a parallelogram are equal) angle ADP = angle CBQ (given or both 90°)	
		C1	(dep C1) for complete identification of all three equal aspects with reasons	
		C1	(dep C2) for conclusion of congruency proof	Congruency conclusion must include a reference to ASA
(b)	Explanation	C1	for identifying a pair of equal sides or angles in $APCQ$, with reason, eg $AP = QC$ since triangle ADP is congruent to triangle CBQ	
		C1	(dep C1) for reasoning that $APCQ$ is a parallelogram so opposite sides of a parallelogram are parallel	

4	A & D	B1	cao	

5	14.14	P1	works out scale factor eg (9 + 6) ÷ 6 (= 2.5) **OR** for start of process to find angle DBE eg sin $B = \frac{2}{6}$ oe	Note method can be carried out in either order
		P1	uses Pythagoras eg $6^2 - 2^2$ (= 32) or $\sqrt{32}$ (= 5.6...) **OR** calculates AC eg 2 × "2.5" (= 5) **OR** for complete process to find angle DBE eg $\sin^{-1}\left(\frac{2}{6}\right)$ (= 19.4...)	May be seen on diagram
		P1	complete process to find CB eg "2.5" × "$\sqrt{32}$" (= $10\sqrt{2}$) or $\sqrt{(9+6)^2 - "5"^2}$ (= $10\sqrt{2}$) **OR** uses trigonometry, eg 15 × cos "19.4..."	
		A1	14.1 to 14.15	If the answer is given within the range but then rounded incorrectly award full marks.