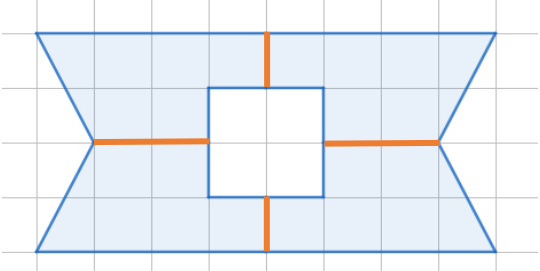


Congruent Shapes Mark Scheme

1(a)	$y = 50^\circ$	[1]
2	...N... and ...A... and ...H...	[1]
	...B... and ...O... and ...L...	[1]
	...P... and ...Q...	[1]
	...M... and ...K...	[1]
3(a)		[1] Correctly divided shape
3(b)	Dan is incorrect,	[1] mark requires an attempted explanation not just for stating answer
	Because the shape doesn't have any more lines of symmetry	[1]
4	Two triangles can show to be congruent using the SAS – side - angle - side rule.	[1] Identifying congruency rules
	$AB = XZ \rightarrow \angle CBA = \angle ZXY \rightarrow CB = XY$	[1] Show SAS using correct lengths and angle
5(a)	$x + 4x + 7x = 180$ $12x = 180$ $x = 180 \div 12 = 15^\circ$ And then substitute this value of x into Sophie's angles:	[1] Identifying angles will sum to 180° and attempt to find the value of x
	$x = 15$ $4x = 60$ $7x = 105$ Yes, Ben is correct.	[1] For showing all 3 angles are correct
5(b)	We cannot say if they are congruent or not, because we don't know the lengths of the sides.	[1] Reasoning due to no lengths of sides
6(a)	$BE = EC$ $\angle ABC = \angle DCE = 90^\circ$	[1] Correct logic
	$DE = AE$ So, we have two right angle triangles with equal hypotenuses and equal shorter sides, so they are congruent.	[1] Correct explanation required

Turn over ►

6(b)	<p>Triangle GFE is an isosceles $\angle GFE = \angle EGF$ $FE = GE$ $AE = DE$ and $FA = GD$</p>	[1] Correct logic
	<p>We can therefore say that triangle ADE is an isosceles triangle and that: $\angle DAE = \angle EDA = x$</p>	[1] Identification of isosceles
	<p>$\angle FAD + x = 180$ $\angle GDA + x = 180$ $\angle FAD + x = \angle GDA + x$ $\angle FAD = \angle GDA$</p>	[1] Logic applied using algebra
	<p>$FA = GD$ $\angle FAD = \angle GDA$ $AD = AD$</p>	[1] Use of the side-angle-side rule to show that they are congruent.
7(a)	<p>AAS SAS</p>	[1] for two correct
	<p>RHS SSS</p>	[1] for four correct and no incorrect answers circled
	<p>ASA</p>	[1] for five correct and no incorrect answers circled
7(b)	<p>AAA wouldn't prove congruence because the sides could be different length. The triangles would however be similar.</p>	[1] Suitable explanation or diagram
	<p>SSA wouldn't prove congruence because the angle between the two given sides could be anything, with the third side being different depending on the angle.</p>	[1] Suitable explanation or diagram

END