Question Number	Scheme	Notes	Marks
6(i)(a)	Stretch scale factor 3 parallel to the *y*-axis	Stretch (not enlargement)	B1
		Scale factor 3 parallel to the *y*-axis. Allow, e.g. '3 times *y* values', '*y* increased by 3 factor', or similar. Allow, e.g. 'direction of *y*', 'along *y*', 'vertical', or similar. Ignore any mention of the origin. If additional transformations are included, send to Review	B1
			(2)
(b)	$\begin{pmatrix} \frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \\ -\frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \end{pmatrix}$	Correct matrix. $\frac{1}{\sqrt{2}}$ may be seen rather than $\frac{\sqrt{2}}{2}$	B1
			(1)
(c)	$\begin{pmatrix} \frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \\ -\frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \end{pmatrix}\begin{pmatrix} 1 & 0 \\ 0 & 3 \end{pmatrix}$	Attempt to multiply the right way round, i.e. **BA**, not **AB** At least two correct terms (for their matrix **B**) are needed to indicate a correct multiplication attempt	M1
	$\begin{pmatrix} \frac{\sqrt{2}}{2} & \frac{3\sqrt{2}}{2} \\ -\frac{\sqrt{2}}{2} & \frac{3\sqrt{2}}{2} \end{pmatrix}$ or equiv. e.g. $\frac{1}{\sqrt{2}}\begin{pmatrix} 1 & 3 \\ -1 & 3 \end{pmatrix}$	Correct matrix	A1
			(2)
(ii)	Trapezium area$=\frac{1}{2}(5+2)(k+8)$	Correct method for the area of the trapezium	M1
	$\begin{vmatrix} 5 & 1 \\ -2 & 3 \end{vmatrix} = 5\times 3-(-2)\times 1=17$	Correct method for the determinant	M1
		17 (Allow $\pm$ 17)	A1
	$\frac{1}{2}(5+2)(k+8)\times 17=510\Rightarrow k=...$	Multiplies their trapezium area by their determinant, sets equal to 510 and solves for *k*. Or equivalently: Equates their trapezium area to (510 ÷ determinant) and solves for *k*	M1
	$k=\frac{4}{7}$	$\frac{4}{7}$ or exact equivalent. If additional answers such as $-\frac{4}{7}$ are given and not rejected, this is A0	A1
			(5)

(ii) **Way 2**	$\begin{pmatrix} 5 & 1 \\ -2 & 3 \end{pmatrix}\begin{pmatrix} -2 & -2 & 5 & 5 \\ 0 & k & 8 & 0 \end{pmatrix}$ $= \begin{pmatrix} -10 & -10+k & 33 & 25 \\ 4 & 4+3k & 14 & -10 \end{pmatrix}$	Multiplies correct matrices to find the coordinates for T'	2nd M
		Correct coordinates (can be left in matrix form)	A1
	$\frac{1}{2}[-10(4+3k)+14(-10+k)-330+100-4(-10+k)-33(4+3k)-350-100]$	Correct method for area of T' ('shoelace rule' with or without a modulus), using their coordinates for T'	1st M
	$\pm\frac{1}{2}(952+119k)=510$, $k=...$	Sets area of T' equal to 510 and solves for k	M1
	$k=\frac{4}{7}$	$\frac{4}{7}$ or exact equivalent. If additional answers such as $-\frac{4}{7}$ are given and not rejected, this is A0	A1
			Total 10