6) A is midpt of $[RC]$ proved.

So, $\overrightarrow{RA} = \frac{1}{2}\overrightarrow{RC}$

then, $\overrightarrow{RB} + \frac{1}{2}\overrightarrow{RC} = \overrightarrow{RB} + \overrightarrow{RA}$

but $ARBE$ is a parallelogram (proved)

So, $\overrightarrow{RB} + \overrightarrow{RA} = \overrightarrow{RE}$ (Sum of vectors having same origin, parallelogram rule).

but (D) is image of (d) by $\overrightarrow{RB} + \frac{1}{2}\overrightarrow{RC}$ (given)

then, (D) is image of (d) by $\overrightarrow{RE}$.

So, $(D) \parallel (d)$.

hence, $a_{(D)} = a_{(d)} = -\frac{5}{3}$

Now, let D be 4^{th} vertex of parallelogram $AEDC$.

but, $\overrightarrow{RA} = \overrightarrow{AC}$ (proved)

& $\overrightarrow{RB} = \overrightarrow{AE}$ (opp. sides of parm $ARBE$)

then, $\overrightarrow{RE} = \overrightarrow{AD}$ (Sum of equal vectors are equal)

$x_E - x_R = x_D - x_A$	$y_E - y_R = y_D - y_A$
$4 + 9 = x_D + 4$	$0 +$ [illegible] $= y_D - 2$
$x_D = 9$	$y_D = 3$

$D(9, 3)$

but, A belongs to (d), then its image D by $\overrightarrow{RE}$ belongs to (D).

(D): $\dfrac{y - y_D}{x - x_D} = -\dfrac{5}{3}$.

$\dfrac{y - 3}{x - 9} = -\dfrac{5}{3}$

$y - 3 = -\dfrac{5}{3}(x - 9)$

Thus, (D): $y = -\dfrac{5}{3}x + 18$