4(a)	$\mathrm{G}_X(t) = \frac{2}{5}t + \frac{3}{5}t^2$
4(b)	$\mathrm{G}_Y(t) = \frac{1}{625}t^4(2+3t)^4 \quad \left[= t^4\left(\frac{2}{5}+\frac{3}{5}t\right)^4\right]$
4(c)	Attempt at coefficient of t^6 in *their* $\mathrm{G}_Y(t)$.
	$\mathrm{P}(Y=6) = \frac{216}{625}$

4(d)	$G_Y'(t) = \frac{4}{625}t^3(2+3t)^4 + \frac{12}{625}t^4(2+3t)^3$ OR $G_Y'(t) = \frac{1}{625}\left(64t^3 + 480t^4 + 1296t^5 + 1512t^6 + 648t^7\right)$
	$G_Y''(t) = \frac{12}{625}t^2(2+3t)^4 + \frac{96}{625}t^3(2+3t)^3 + \frac{108}{625}t^4(2+3t)^2$ OR $G_Y''(t) = \frac{1}{625}\left(192t^2 + 1920t^3 + 6480t^4 + 9072t^5 + 4536t^6\right)$
	$G_Y'(1) = \frac{32}{5} = 6.4,\ G_Y''(1) = \frac{888}{25} = 35.52$
	$\mathrm{Var}(Y) = \frac{888}{25} + \frac{32}{5} - \left(\frac{32}{5}\right)^2$
	$\mathrm{Var}(Y) = \frac{24}{25} \quad [= 0.96]$
	Alternative method for question 4(d)
	$\mathrm{E}(X) = \frac{2}{5} + \frac{3}{5}\times 2 = \frac{8}{5}$ or use $G_X'(t) = \frac{2}{5} + \frac{6}{5}t$.
	$\mathrm{E}(X^2) = \frac{2}{5} + \frac{3}{5}\times 4 = \frac{14}{5}$ or use $G_X''(t) = \frac{6}{5}$
	$\mathrm{Var}(X) = \frac{14}{5} - \left(\frac{8}{5}\right)^2$ or $\mathrm{Var}(X) = \frac{6}{5} + \frac{8}{5} - \left(\frac{8}{5}\right)^2$
	$\mathrm{Var}(X) = \frac{6}{25}$
	$\mathrm{Var}(Y) = 4\mathrm{Var}(X) = \frac{24}{25}$