Part (a)

The SOA solutions were not too very detailed, but that seems reasonable given this was only a 1 point question

(i) α-VaR represents the loss that, with probability will not be exceeded

(ii) the CTE is the expected loss given that the loss falls in the worst (1 - α) part of the loss distribution

Part (b)

X	Probability
5	.800
80	.170
500	.030

Y	Probability
10	.850
120	.145
2000	.005

$X+Y=k$	$Pr(X+Y=k)$	$Pr(X+Y \geqslant k)$	Weight
500+2000=2500	$.030 \cdot .005$	...	Full
80+2000=2080	$.170 \cdot .005$	...	Full
5+2000=2005	$.800 \cdot .005$	.005	Full
500+120=620	$.030 \cdot .145$	.00935	Full
500+10=510	$.030 \cdot .850$	.03485	Full
80+120=**200**	$.170 \cdot .145$	.0595	Partial
...	...	...	None

- $VaR(95\%) = \mathbf{200}$

Part (b)

$X+Y$	Weight
2500	$.030 \cdot .005$
2080	$.170 \cdot .005$
2005	$.800 \cdot .005$
620	$.030 \cdot .145$
510	$.030 \cdot .850$
200	.05 - .03485
Total	**.05**

- $CTE(95\%) = \frac{\sum[(X+Y)\cdot Weight]}{.05} = 577.9$

Part (c)

- Only half of this part is still applicable based on the current syllabus
- Explain the shortcomings of VaR (on syllabus) and how stress testing can complement standard VaR models (off syllabus).
- Shortcomings of VaR: LRM-111 / Value-At-Risk: Evolution, Deficiencies and Alternatives