Question Number	Scheme	Notes	Marks
6(a)	$W = B - 1.1R$	May be implied by correct mean or variance	M1
	$W \sim \mathrm{N}(55 - 1.1\times 51, 1.3^2 + 1.1^2 \times 1.2^2)$ or $W \sim \mathrm{N}(-1.1, 3.4324)$	$(\pm)1.1$, awrt 3.43 (may be seen in standardisation)	A1, A1
	$\mathrm{P}(W < 0) \quad = \mathrm{P}\left(Z < \dfrac{0+1.1}{\sqrt{3.4324}}\right)$	Standardising with their mean and their sd. leading to a probability > 0.5	M1
	$= \mathrm{P}(Z < 0.5937...)$		
	$= 0.7224$ or 0.7237	**awrt 0.72**	A1
			(5)
6(b)	$X = B_1 - B_2$	May be implied by correct mean or variance	M1
	$X \sim \mathrm{N}(55 - 55, 2\times 1.3^2)$ or $X \sim \mathrm{N}(0, 3.38)$	$0, 3.38$	A1, A1
	$\mathrm{P}\left(Z > \dfrac{1-0}{\sqrt{3.38}}\right)$ or $\mathrm{P}\left(Z < \dfrac{-1-0}{\sqrt{3.38}}\right)$	dep on 1st M1 for standardising with their mean and their sd.	dM1
	$\mathrm{P}(\lvert X\rvert > 1) \quad = 2\times \mathrm{P}(X > 1)$	For $2\times$ seen or implied	M1
	$= 2\times \mathrm{P}(Z > 0.5439...) \quad = 2\times(1 - 0.7054)$	2×0.2946 or 2×0.2932 (calc)	
	$= 0.5892$	**awrt 0.59**	A1
			(6)
6(c)	$V = B_1 + B_2 + B_3 + B_4 + B_5 + B_6 + B_7 + B_8 + B_9 + B_{10} + S$ $Y = R_1 + R_2 + R_3 + R_4 + R_5 + R_6 + R_7 + R_8 + R_9 + R_{10} + R_{11} + S$	May be implied by either correct distribution	M1
	$V \sim \mathrm{N}(553, 16.94)$ and $Y \sim \mathrm{N}(564, 15.88)$	Both correct	A1
	$D = Y - V$ so $D \sim \mathrm{N}(11\times 51 - 10\times 55,\ 11\times 1.2^2 + 10\times 1.3^2 + 2\times 0.2^2)$ or $D \sim \mathrm{N}(11,\ 32.82)$	Attempt at their difference for the mean, and their sum for the variance.	M1
		$(\pm)11$ and awrt 32.8	A1
	$\mathrm{P}(D > 0) \quad = \mathrm{P}\left(Z > \dfrac{0-11}{\sqrt{32.82}}\right)$	dep on 1st M1 for standardising using their mean and their standard deviation leading to a probability > 0.5	dM1
	$= \mathrm{P}(Z > -1.920...)$		
	$= 0.9726$	**awrt 0.973**	A1
			(6)
			Total 17

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