Question Number	Scheme	Marks
2(a)	$H_0 : \mu_{year7} = \mu_{year8}$ $H_1 : \mu_{year7} \neq \mu_{year8}$	B1
	$SE = \sqrt{\frac{38}{240} + \frac{42}{240}}$	M1
	$z = \frac{103 - 101}{SE}$	M1
	$= (\pm)3.464....$ $\left(2\sqrt{3}\right)$ awrt $(\pm)3.46$	A1
	$Z_{critical} = 2.5758$	B1
	In CR/Significant/Reject H_0	M1
	There is sufficient evidence to suggest that the regional education officer's claim is not correct/ There is a difference between the mean scores of the two year groups.	A1
		(7)
(b)	CLT allows us to use sample means (oe) being normally distributed	B1
		(1)

	Notes	Total 8
(a)	**B1**	both hypotheses correct. Allow equivalent rearrangements. Must be in terms of μ If using e.g. $\mu_A = \mu_B$ A and B must be clearly identified with year groups
	M1	for use of SE with 38 and 42 (may be implied by SE = awrt 0.577)
	M1	for a correct standardisation expression using 103, 101 (in either order) and SE = awrt.0577 or ft their stated SE or if not stated (i.e. only seen in standardisation) only allow $\sqrt{\frac{38^2}{240} + \frac{42^2}{240}}$ or $\sqrt{\frac{\sqrt{38}}{240} + \frac{\sqrt{42}}{240}}$
	A1	awrt 3.46 or awrt –3.46 allow p value of awrt 0.000266
	B1	|CV| = 2.5758 or better (seen)
	M1	a correct statement linking their test statistic and their CV – need not be contextual but do not allow contradicting non contextual comments.
	A1	do not allow a ft conclusion here. a correct contextual statement (dependent on 2nd M1) which must be consistent with their test statistics and CV and which also must reject H_0 . It must mention the officer or mean scores.
(b)	**B1**	a correct explanation which must mention sample means oe (population means are normally distributed is B0) ignore extraneous non-contradictory comments