Question	Scheme	Marks	AOs
3 (a)	Distance travelled	M1	3.1b
	$=\frac{(15+17)}{2}\times16\times60+\frac{(10+12)}{2}\times16\times60$	A1	1.1b
	$=16\times16\times60+11\times16\times60=15360+10560$ $=25920\,\text{m}=25.92\,\text{km}$	A1	1.1b
		(3)	
(b)	Both trains have travelled the same distance	M1	3.1b
	$\Rightarrow 25920=\frac{(M+(M-2))}{2}\times24\times60$	A1ft A1ft	1.1b 1.1b
	Solve for T	M1	1.1b
	$M-1=18\Rightarrow T=33-19=14$	A1	2.2a
		(5)	
(c)	e.g. the platforms at A, B and C have no length the trains have no length A, B and C modelled as points the trains are modelled as particles.	B1	3.5b
		(1)	
			(9 marks)

Notes:

(a)	
M1	Complete method to find the distance AC. Condone confusion between minutes and seconds.
A1	Unsimplified expression with at most one error (the omission of $\times60$ in each term is one error)
A1	26000 m or 26 km or better
(b)	
M1	Equate the distance travelled by Y to their answer from (a)
A1ft **A1ft**	Unsimplified equation in one unknown with at most one error. Follow their (a) Correct unsimplified equation in one unknown. Follow their (a)
M1	Solve for T
A1	Correct answer only
(c)	
B1	Any relevant assumption