Harder Speed Calculations		
(a)	**(b)**	**(c)**
A tractor travels at 12 mph for 10 minutes and then at 20 mph for 15 minutes. Calculate the average speed of the tractor across the whole journey. $16.8\ mph$	A train travels 320 km from Manchester to London in 2 hours 5 minutes. Initially, the train travels at 180 km/h for 50 minutes. It then travels at a constant speed s for the rest of the journey. Find s in km/h. $136\ km/h$	Riya walks from home to school in 24 minutes at a speed of 4 km/h. She then jogs back home and is 9 minutes quicker than when she walked. What is Riya's average speed jogging home? $6.4\ km/h$
(d)	**(e)**	**(f)**
Liverpool is 120 km from Leeds. A car sets off from Liverpool travelling at 80 km/h. A lorry sets off from Leeds travelling at 70 km/h. How far from Liverpool are the two vehicles when they pass each other? $64\ km$	Ayesha goes for the same run every morning. She normally runs at 7.5 km/h but finds that when she increases her speed to 8 km/h, she completes the run 2 minutes quicker. How far does Ayesha run? $4\ km$	Train A leaves the station at 9.24 am travelling at 126 km/h. Train B leaves the same station at 9.32 am, travelling along the same line at 140 km/h. At what time will train B catch up to train A? $10{:}44\ am$
(g)	**(h)**	**(i)**
Theo travels from home to work at a constant speed of 50 km/h. At the end of the day, he travels from work to home at a constant speed of 30 km/h. Calculate his average speed across both journeys. $37.5\ km/h$	A taxi travels at x km/h for 15 minutes, then at $3x$ km/h for 10 minutes and finally at $2x$ km/h for 5 minutes. Find the average speed of the taxi across the whole journey in terms of x. $\frac{11x}{6}\ km/h$	Yusuf runs a 400 m race. He sets off at x m/s and runs at this speed for 50 seconds before increasing his speed by 25% to run for the remaining 30 seconds. Find the value of x. $5\ m/s$