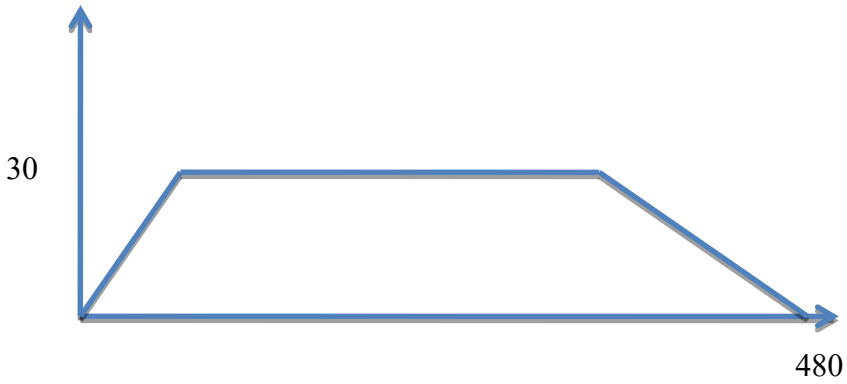
7 (a)	$108 \times 1000/3600 = 30 \text{ m s}^{-1}$	M1 A1 (2)
(b)		B1 shape **DB1 ft** figs (2)
(c)	$12000 = \frac{1}{2} \times 30(480 + 480 - 4T)$ $T = 40$ $a = 30/40 = 0.75 \text{ m s}^{-2}$	M1 A2 A1 M1 A1 (6) **10**

NOTES

Question 7(a)
M1 for 108 x 1000/3600 oe
A1 for 30

Question 7(b)
First B1 for trapezium (B0 for triangle), from the origin, finishing on the *t*-axis.
Second dependent B1 **ft** on their '30' and 480 or 108 and (8/60 oe).

Question 7(c)
First M1 for clear attempt at equating *total* area under a trapezium to distance travelled oe (equation must include at least one '1/2') to give equation in ONE unknown.
A2 for a correct equation , -1 each error. **N.B.** Repeated use of an incorrect v from part (a) is ONE error.
Third A1 for $T = 40$ (or 120)
N.B. (First M1 **only** for ½(480 + *x*).30 = 12000
First A1 for 480 – *x* = 160; Second A1 if they divide 160 in ratio 1:3)
(First M0 if they use *s* = the full distance in any single *suvat* equation)
Second M1 (independent) for a complete method to find *a*.
Fourth A1 for 0.75