Tool life

Prob.1: $V = 50\ m/min$, $T = 30\ min$

$n = 0.25$

(i) At $V = 30\ m/min$, $T = ?$

(ii) At $T = 120\ min$, $V = ?$

$\therefore VT^n = C$

$50(30)^{0.25} = C$

$C = 117\ m/min$

(i) $30\,T^{0.25} = 117$

$T^{0.25} = \frac{117}{30}$

$T = \left(\frac{117}{30}\right)^{1/0.25}$

$T = 231.34\ min$

(iii) $V(120)^{0.25} = 117$

$V = \frac{117}{(120)^{0.25}} = 35.35\ m/min$