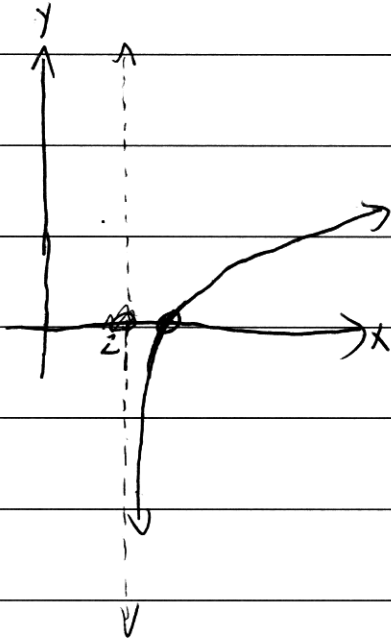
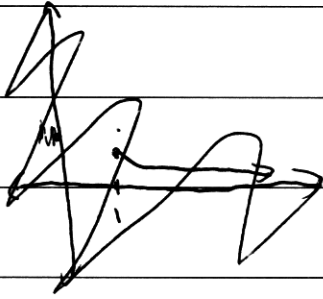


a) i)



$$c) i) m = \frac{50}{5} = 10$$

$$v_1 = 10t$$

~~$$v_2 = 2t^2$$~~

~~after 5 seconds~~

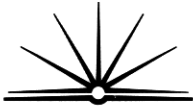
~~$$v_2 = 50$$~~

~~$$v_1 = 10t$$~~

~~after 5 seconds~~

~~$$v_1 = 50$$~~

~~they are at the same spot~~



$$i) v_2 = 2t^2$$

$$x_2 = \int 2t^2 \cdot dt$$

$$x_2 = \frac{2t^3}{3}$$

after 5 seconds

$$x_2 = 83\frac{1}{3}$$

$$v_1 = 10t$$

$$x_1 = \int 10t \cdot dt$$

$$x_1 = \frac{10t^2}{2}$$

$$x_1 = 5t^2$$

after 5 seconds

$$x_1 = 125$$

\therefore the jet is behind the car by $41\frac{2}{3}$ m

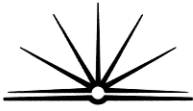
$$ii) x_1 = 5t^2$$

$$x_2 = \frac{2t^3}{3}$$

$$5t^2 = \frac{2t^3}{3}$$

$$15t^2 = 2t^3$$

$$15t = 2t^2$$



11 (cont.) $15 = 2t$

$$t = 7.5 \text{ seconds}$$