A1Q5

A car is travelling at velocity $v(t) = 30 \cdot t \cdot (4 - t)$ *kmph*.
What is the maximum velocity on $0 \leq t \leq 4$?
How far does the car travel on $0 \leq t \leq 4$?

```
> restart:
> v := 30*t*(4-t);
```

$$v := 30\,t\,(4 - t) \quad \textbf{(1)}$$

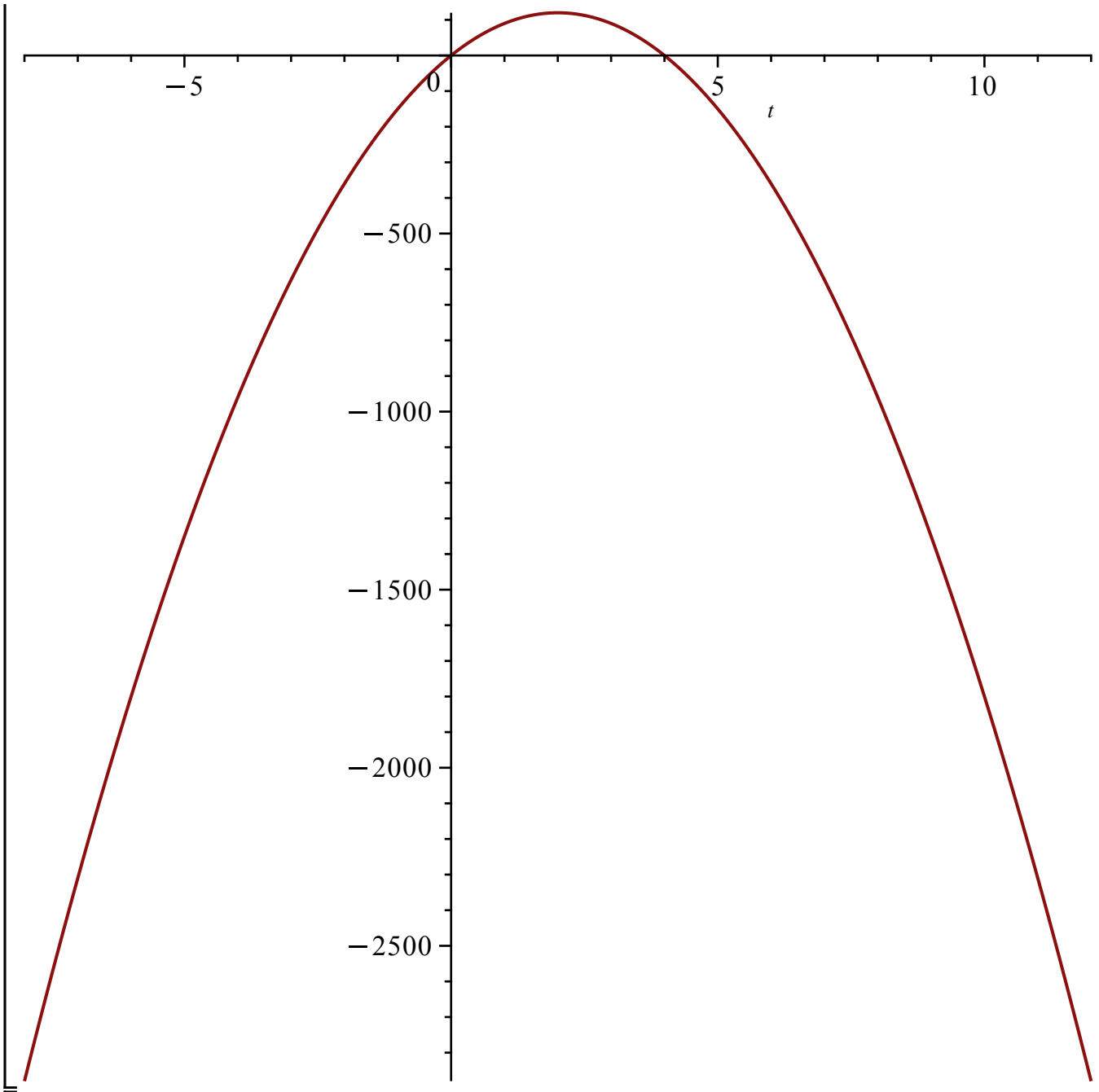
```
> w := diff(v,t);
```

$$w := 120 - 60\,t \quad \textbf{(2)}$$

```
> solve(w=0,t);
```

$$2 \quad \textbf{(3)}$$

```
> plot(v);
```




```
> eval(v,t=2);
```

120 **(4)**

The maximum velocity on) <= t <= 4 is 120 kmph.

How far does the car travel on 0 <= t <= 4?

```
> int(v,t=0..4);
```

320 **(5)**

The car travels 320 km on 0 <= t <= 4.