Bus Problem with two busses, one at an eight-minute inverval and one at a ten-minute interval

```
> (1 - t/10)*(1 - t/8);
```

$$\left(1-\frac{1}{10}t\right)\left(1-\frac{1}{8}t\right)$$

```
> Diff((1 - t/10)*(1 - t/8),t) =
  diff((1 - t/10)*(1 - t/8),t);
```

$$\frac{\partial}{\partial t}\left(1-\frac{1}{10}t\right)\left(1-\frac{1}{8}t\right)=-\frac{9}{40}+\frac{1}{40}t$$

```
> t * diff((1 - t/10)*(1 - t/8),t);
```

$$t\left(-\frac{9}{40}+\frac{1}{40}t\right)$$

```
> Int(t*diff((1 - t/10)*(1 - t/8),t),t=0..8) =
  int(t*diff((1 - t/10)*(1 - t/8),t),t=0..8);
```

$$\int_0^8 t\left(-\frac{9}{40}+\frac{1}{40}t\right)dt=\frac{-44}{15}$$

Bus Problem with three busses, all at ten-minute intervals

```
> (1 - t/10)^3;
```

$$\left(1-\frac{1}{10}t\right)^3$$

```
> Diff((1 - t/10)^3,t) =
  diff((1 - t/10)^3,t);
```

$$\frac{\partial}{\partial t}\left(1-\frac{1}{10}t\right)^3=-\frac{3}{10}\left(1-\frac{1}{10}t\right)^2$$

```
> t * diff((1 - t/10)^3,t);
```

$$-\frac{3}{10}t\left(1-\frac{1}{10}t\right)^2$$

```
> Int(t * diff((1 - t/10)^3,t),t=0..10) =
  int(t * diff((1 - t/10)^3,t),t=0..10);
```

$$\int_0^{10} -\frac{3}{10}t\left(1-\frac{1}{10}t\right)^2 dt=\frac{-5}{2}$$