```
> restart; #QUICK at boundary
> #phi:=a*x^2+b*x+c;
> eq_W:=a*(-dx/2)^2+b*(-dx/2)+c=phi[W];
```

$$eq\_W := \frac{a\,dx^2}{4} - \frac{b\,dx}{2} + c = \phi_W$$

```
> eq_P:=a*(0)^2+b*(0)+c=phi[P];
```

$$eq\_P := c = \phi_P$$

```
> eq_E:=a*(+dx)^2+b*(+dx)+c=phi[E];
```

$$eq\_E := a\,dx^2 + b\,dx + c = \phi_E$$

```
> solve({eq_W,eq_P,eq_E},{a,b,c});
```

$$\{c = \phi_P,\ b = \frac{1}{3}\frac{3\,\phi_P + \phi_E - 4\,\phi_W}{dx},\ a = \frac{2}{3}\frac{-3\,\phi_P + \phi_E + 2\,\phi_W}{dx^2}\}$$

```
> a := 2/3*(-3*phi[P]+phi[E]+2*phi[W])/(dx^2): b :=
  -1/3*(-3*phi[P]-phi[E]+4*phi[W])/dx: c := phi[P]:
> phi[e]:=a*(dx/2)^2+b*(dx/2)+c;
```

$$\phi_e := \phi_P + \frac{1}{3}\phi_E - \frac{1}{3}\phi_W$$

```
> subs(x=-dx/2,diff(a*x^2+b*x+c,x)):simplify(%); #d(phi)/dx at
  boundary
```

$$-\frac{1}{3}\frac{-9\,\phi_P + \phi_E + 8\,\phi_W}{dx}$$

```
>
```