

```
> restart: # BaseStock6-Corrected.mws
```

```
> c:=4; h:=7; b:=10; Low:=0; Hi:=15; f:=w->1/(Hi-Low);
```

```
    c := 4  
    h := 7  
    b := 10  
    Low := 0  
    Hi := 15
```

$$f := w \mapsto \frac{1}{Hi - Low} \quad (1)$$

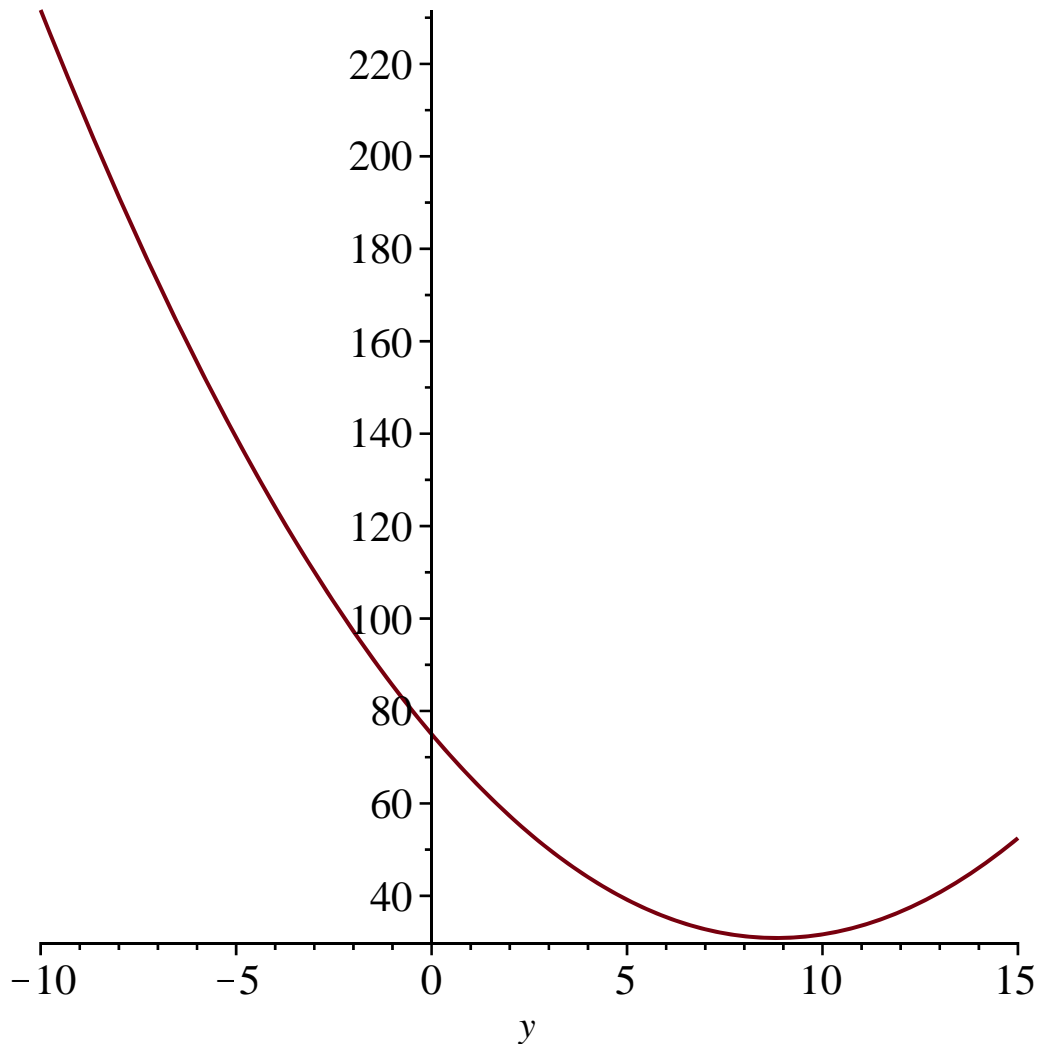
```
> EV[2]:=unapply(0,x);
```

$$EV_2 := x \mapsto 0 \quad (2)$$

```
> L:=unapply(h*int((y-w)*f(w),w=0..y)+b*int((w-y)*f(w),w=y..Hi),y);
```

$$L := y \mapsto -\frac{y^2}{10} + 75 - \frac{2y(15-y)}{3} \quad (3)$$

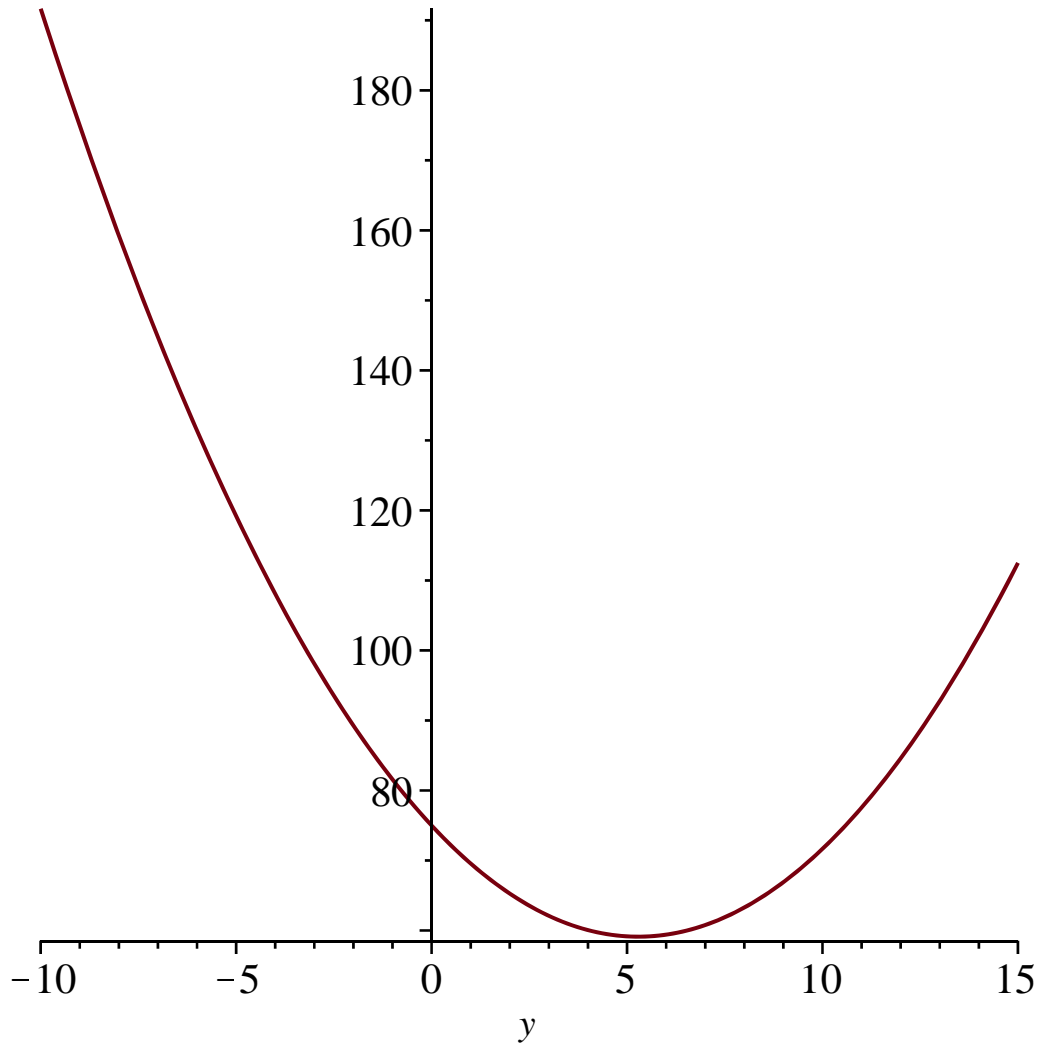
```
> plot(L(y), y=-10..15)
```



```
> G[1]:=unapply(c*y+L(y)+EV[2](y),y);
```

$$G_1 := y \mapsto 4y - \frac{y^2}{10} + 75 - \frac{2y(15-y)}{3} \quad (4)$$

```
> plot(G[1](y), y=-10..15)
```



```
> S[1]:=solve(diff(G[1](y),y),y); evalf(%);
```

$$S_1 := \frac{90}{17}$$
$$5.294117647$$

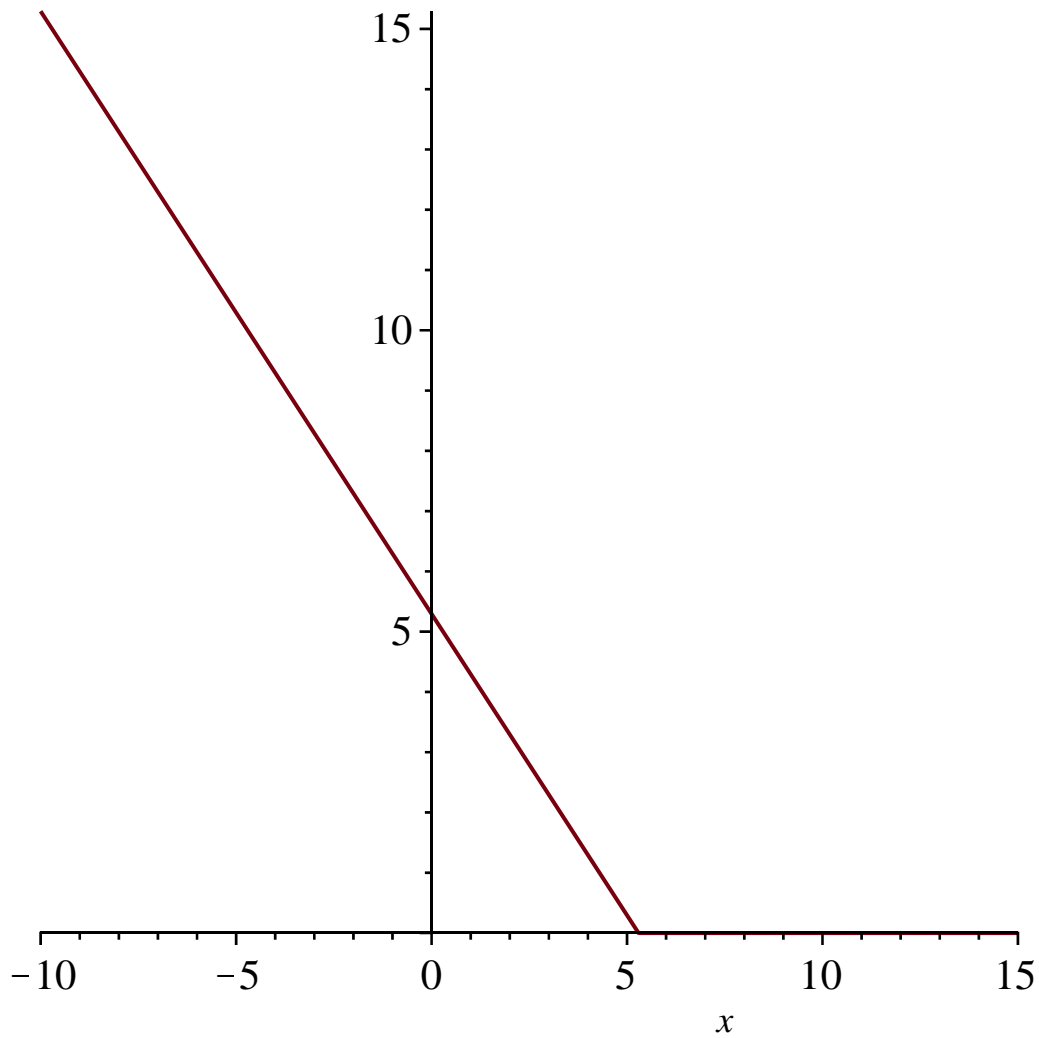
(5)

```
> mu[1] := piecewise(x < S[1], S[1] - x, 0);
```

$$\mu_1 := \begin{cases} \frac{90}{17} - x & x < \frac{90}{17} \\ 0 & \text{otherwise} \end{cases}$$

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```
> plot(mu[1], x=-10..15)
```



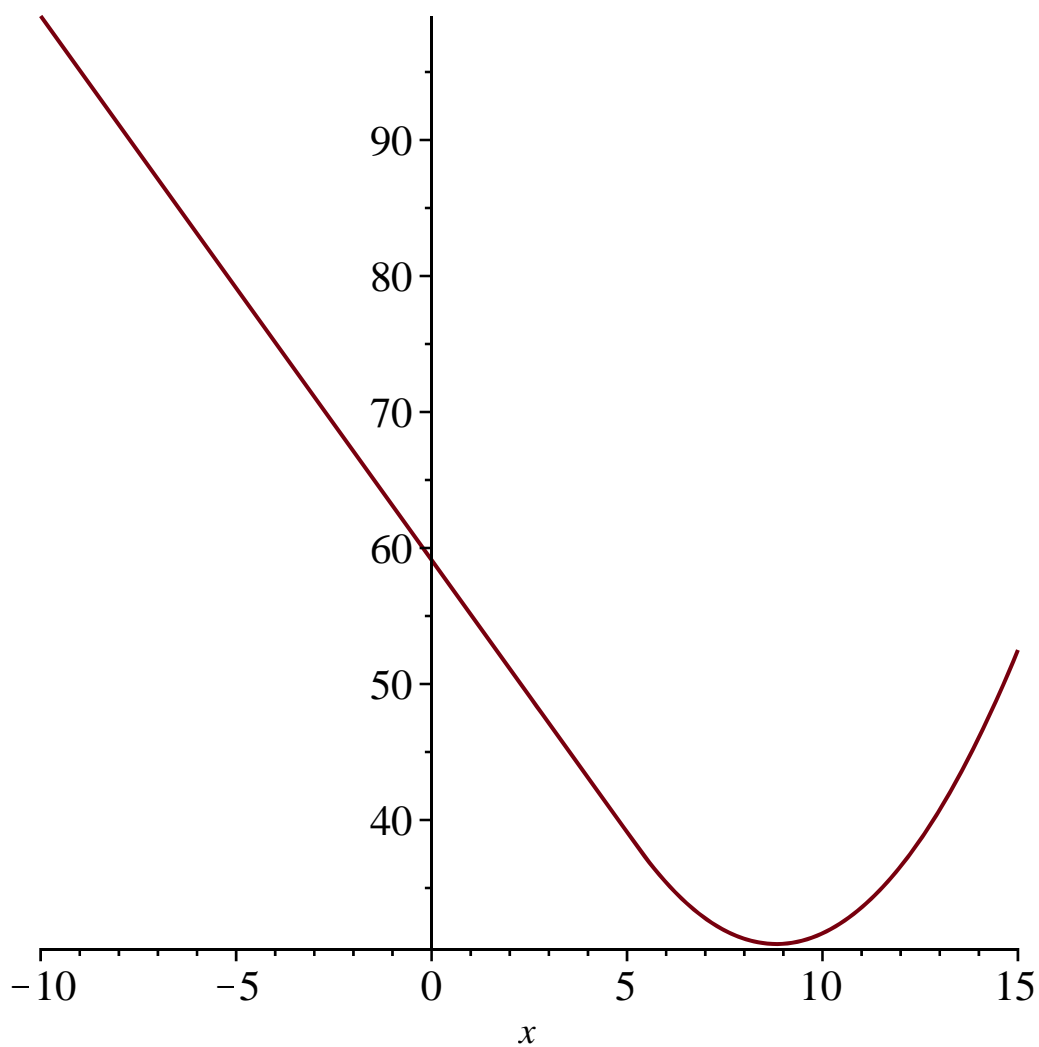
```
> V[1]:=unapply(piecewise(x<S[1],c*(S[1]-x)+L(S[1]),simplify(L(x))
),x);
```

$$V_1 := x \mapsto \begin{cases} \frac{1005}{17} - 4x & x < \frac{90}{17} \\ \frac{17}{30}x^2 + 75 - 10x & \text{otherwise} \end{cases} \quad (7)$$

```
> V[1](x);
```

$$\begin{cases} \frac{1005}{17} - 4x & x < \frac{90}{17} \\ \frac{17}{30}x^2 + 75 - 10x & \text{otherwise} \end{cases} \quad (8)$$

```
> plot(V[1](x), x=-10..15)
```



> $V_{yw} := V[1](y-w);$

$$V_{yw} := \begin{cases} \frac{1005}{17} - 4y + 4w & y - w < \frac{90}{17} \\ \frac{17(y-w)^2}{30} + 75 - 10y + 10w & \text{otherwise} \end{cases} \quad (9)$$

> $op(1, V_{yw}); op(2, V_{yw}); op(3, V_{yw});$

$$\begin{aligned} & y - w < \frac{90}{17} \\ & \frac{1005}{17} - 4y + 4w \\ & \frac{17(y-w)^2}{30} + 75 - 10y + 10w \end{aligned} \quad (10)$$

> $EV[1] := unapply(int(op(3, V_{yw}) * f(w), w=0..y-S[1]) + int(op(2, V_{yw}) * f(w), w=y-S[1]..15), y);$

$$EV_1 := y \mapsto \frac{17 \left(y - \frac{90}{17}\right)^3}{1350} + \frac{\left(-\frac{17y}{225} + \frac{2}{3}\right) \left(y - \frac{90}{17}\right)^2}{2} + \frac{17y^2 \left(y - \frac{90}{17}\right)}{450} + \frac{18y}{17} \quad (11)$$

$$+ \frac{24135}{289} - \frac{2y \left(y - \frac{90}{17} \right)}{3} - \frac{4y \left(\frac{345}{17} - y \right)}{15} - \frac{2 \left(y - \frac{90}{17} \right)^2}{15}$$

> simplify(EV[1](y));

$$\frac{17}{1350} y^3 - \frac{1}{5} y^2 - \frac{50}{17} y + \frac{25215}{289}$$

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> G[0]:=unapply(c*y+L(y)+EV[1](y),y);

$$G_0 := y \mapsto \frac{86y}{17} - \frac{y^2}{10} + \frac{45810}{289} - \frac{2y(15-y)}{3} + \frac{17 \left(y - \frac{90}{17} \right)^3}{1350}$$

(13)

$$+ \frac{\left(-\frac{17y}{225} + \frac{2}{3} \right) \left(y - \frac{90}{17} \right)^2}{2} + \frac{17y^2 \left(y - \frac{90}{17} \right)}{450} - \frac{2y \left(y - \frac{90}{17} \right)}{3}$$

$$- \frac{4y \left(\frac{345}{17} - y \right)}{15} - \frac{2 \left(y - \frac{90}{17} \right)^2}{15}$$

> simplify(G[0](y));

$$- \frac{152}{17} y + \frac{11}{30} y^2 + \frac{46890}{289} + \frac{17}{1350} y^3$$

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> plot(G[0](y), y=-10..15)



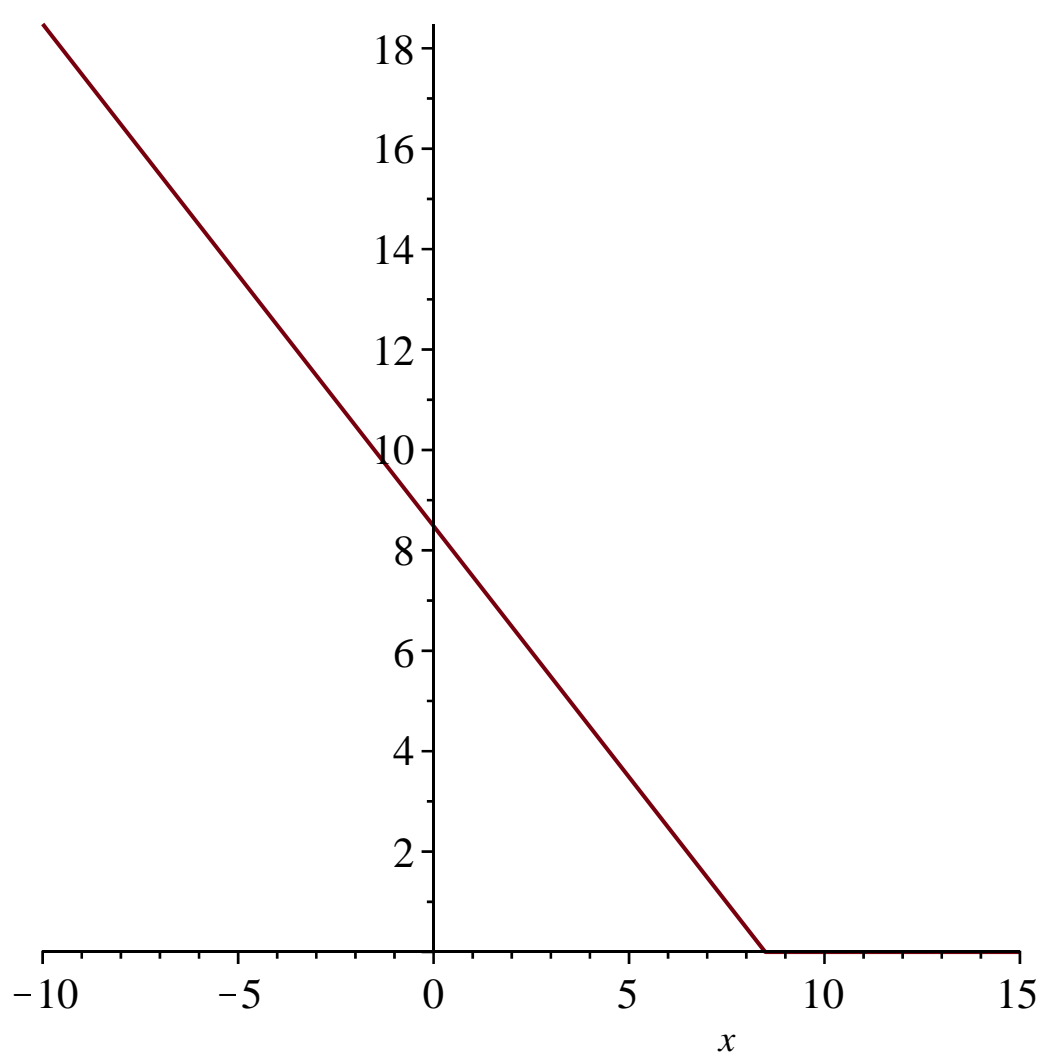
```
> evalf(solve(diff(G[0](y),y),y)); S[0]:= %[1];
      8.484289527, -27.89605423
      S0 := 8.484289527
```

(15)

```
> mu[0] := piecewise(x < S[0], S[0]-x, 0)
      μ0 := { 8.484289527 - x   x < 8.484289527
              0                otherwise
```

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```
> plot(mu[0], x=-10..15)
```



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