```
> a:=3;b:=5;
```

$$a := 3$$

$$b := 5$$

```
> defh:=h(y)=h30*y^3+h11*mu*y+h50*y^5+h12*y*mu^2+h31*mu*y^3;
```

$$defh := \mathrm{h}(y) = h30\, y^3 + h11\, \mu\, y + h50\, y^5 + h12\, y\, \mu^2 + h31\, \mu\, y^3$$

```
> -h(y)+mu*y-y^3-a*h(y)*y^2-diff(h(y),y)*b*h(y);
```

$$-\mathrm{h}(y) + \mu\, y - y^3 - 3\, \mathrm{h}(y)\, y^2 - 5 \left(\frac{\partial}{\partial y} \mathrm{h}(y)\right) \mathrm{h}(y)$$

```
> subs(defh,%);
```

$$-h30\, y^3 - h11\, \mu\, y - h50\, y^5 - h12\, y\, \mu^2 - h31\, \mu\, y^3 + \mu\, y - y^3 - 3\, (h30\, y^3 + h11\, \mu\, y + h50\, y^5 + h12\, y\, \mu^2 + h31\, \mu\, y^3)\, y^2 - 5 \left(\frac{\partial}{\partial y} (h30\, y^3 + h11\, \mu\, y + h50\, y^5 + h12\, y\, \mu^2 + h31\, \mu\, y^3)\right) (h30\, y^3 + h11\, \mu\, y + h50\, y^5 + h12\, y\, \mu^2 + h31\, \mu\, y^3)$$

```
> expansion:=collect(%,[y,mu],distributed);
```

$$expansion := -25\, h50^2\, y^9 - 40\, h31\, h50\, y^7\, \mu + (-3\, h50 - 40\, h30\, h50)\, y^7 + (-30\, h12\, h50 - 15\, h31^2)\, y^5\, \mu^2 + (-30\, h11\, h50 - 3\, h31 - 30\, h30\, h31)\, y^5\, \mu + (-3\, h30 - 15\, h30^2 - h50)\, y^5 - 20\, h12\, h31\, y^3\, \mu^3 + (-20\, h11\, h31 - 20\, h12\, h30 - 3\, h12)\, y^3\, \mu^2 + (-h31 - 3\, h11 - 20\, h11\, h30)\, y^3\, \mu + (-h30 - 1)\, y^3 - 5\, h12^2\, y\, \mu^4 - 10\, h11\, h12\, y\, \mu^3 + (-h12 - 5\, h11^2)\, \mu^2\, y + (-h11 + 1)\, \mu\, y$$

```
> coeff(coeff(expansion,mu,1),y,1);
```

$$-h11 + 1$$

```
> defh11:=h11=solve(%,h11);
```

$$defh11 := h11 = 1$$

```
> coeff(coeff(expansion,mu,0),y,3);
```

$$-h30 - 1$$

```
> defh30:=h30=solve(%,h30);
```

$$defh30 := h30 = -1$$

```
> coeff(coeff(expansion,mu,1),y,3);
```

$$-h31 - 3\, h11 - 20\, h11\, h30$$

```
> defh31:=h31=solve(subs([defh11,defh30],%),h31);
```

$$defh31 := h31 = 17$$

```
> coeff(coeff(expansion,mu,2),y,1);
```

$$-h12 - 5\, h11^2$$

```
> defh12:=h12=solve(subs([defh11],%),h12);
```

$$defh12 := h12 = -5$$

```
> coeff(coeff(expansion,mu,0),y,5);
```

$$-3\, h30 - 15\, h30^2 - h50$$

```
> defh50:=h50=solve(subs([defh30],%),h50);
```