In[25]:=
```
B[b_, f_, eps_, p_, phi0_] = Simplify[(b^2 f (1 + eps) - p - phi0 b (2 + eps)) / eps]
```

Out[25]=
$$-\frac{-b^2\,(1+\text{eps})\,f+p+b\,(2+\text{eps})\,\text{phi0}}{\text{eps}}$$

In[26]:=
```
D[B[b, f, eps, p, phi0], b]
```

Out[26]=
$$-\frac{-2\,b\,(1+\text{eps})\,f+(2+\text{eps})\,\text{phi0}}{\text{eps}}$$

In[29]:=
```
Simplify[D[B[b, f, eps, p, phi0], b] == (2 b (1 + eps) f - (2 + eps) phi0) / eps]
```

Out[29]=
```
True
```

In[30]:=
```
D[B[b, f, eps, p, phi0], f]
```

Out[30]=
$$\frac{b^2\,(1+\text{eps})}{\text{eps}}$$

In[31]:=
```
Simplify[D[B[b, f, eps, p, phi0], f] == b^2 (1 + eps) / eps]
```

In[33]:=
```
Simplify[D[B[b, f, eps, p, phi0], eps]]
```

Out[33]=
$$\frac{-b^2\,f+p+2\,b\,\text{phi0}}{\text{eps}^2}$$

```
Simplify[D[B[b, f, eps, p, phi0], eps] == (p + 2 b phi0 - b^2 f) / eps^2]
```

Out[34]=
```
True
```

In[35]:=
```
Simplify[D[B[b, f, eps, p, phi0], p]]
```

Out[35]=
$$-\frac{1}{\text{eps}}$$

In[36]:=
```
Simplify[D[B[b, f, eps, p, phi0], p] == -1 / eps]
```

Out[36]=
```
True
```

In[37]:=
```
Simplify[D[B[b, f, eps, p, phi0], phi0]]
```

Out[37]=
$$-\frac{b\,(2+\text{eps})}{\text{eps}}$$

In[38]:=
```
Simplify[D[B[b, f, eps, p, phi0], phi0] == -b (2 + eps) / eps]
```

Out[38]=
```
True
```

In[27]:=
```
A[B_, b_, phi0_, b_, f_, eps_] = (B / b + phi0 - b f) (1 + eps) / eps
```

Out[27]=
$$\frac{(1+\text{eps})\left(\frac{B}{b}-b\,f+\text{phi0}\right)}{\text{eps}}$$

In[41]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], b]]
```

Out[41]=
$$-\frac{(1+\text{eps})\left(\text{Bb}[b, f, \text{eps}, p, \text{phi0}] + b\left(b\,f - \text{Bb}^{(1,0,0,0,0)}[b, f, \text{eps}, p, \text{phi0}]\right)\right)}{b^2\,\text{eps}}$$

In[42]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], b] ==
 -((1 + eps) (Bb[b, f, eps, p, phi0] + b (b f - D[Bb[b, f, eps, p, phi0], b]))/
    b^2 eps)]
```

Out[42]= True

In[43]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], phi0]]
```

Out[43]=
$$\frac{(1+\text{eps})\left(b + \text{Bb}^{(0,0,0,0,1)}[b, f, \text{eps}, p, \text{phi0}]\right)}{b\,\text{eps}}$$

In[44]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], phi0] ==
  (1 + eps) (b + D[Bb[b, f, eps, p, phi0], phi0])/(b eps)]
```

Out[44]= True

In[45]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], b]]
```

Out[45]=
$$-\frac{(1+\text{eps})\left(\text{Bb}[b, f, \text{eps}, p, \text{phi0}] + b\left(b\,f - \text{Bb}^{(1,0,0,0,0)}[b, f, \text{eps}, p, \text{phi0}]\right)\right)}{b^2\,\text{eps}}$$

In[46]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], b] ==
 -((1 + eps) (Bb[b, f, eps, p, phi0] + b (b f - D[Bb[b, f, eps, p, phi0], b]))/
    b^2 eps)]
```

Out[46]= True

In[47]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], f]]
```

Out[47]=
$$\frac{(1+\text{eps})\left(-b + \frac{\text{Bb}^{(0,1,0,0,0)}[b,f,\text{eps},p,\text{phi0}]}{b}\right)}{\text{eps}}$$

In[51]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], f] ==
  (1 + eps) (D[Bb[b, f, eps, p, phi0], f] - b^2)/(b eps)]
```

Out[51]= True

In[52]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], eps]]
```

Out[52]=
$$\frac{1}{b\,\text{eps}^2}\left(b\,(b\,f - \text{phi0}) - \text{Bb}[b, f, \text{eps}, p, \text{phi0}] + \text{eps}\,(1+\text{eps})\,\text{Bb}^{(0,0,1,0,0)}[b, f, \text{eps}, p, \text{phi0}]\right)$$

In[54]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], eps] ==
  (b (b f - phi0) - Bb[b, f, eps, p, phi0] + eps (1 + eps) D[ Bb[b, f, eps, p, phi0], eps]) /
   (b eps^2)]
```

Out[54]= True

In[55]:=
```
Simplify[D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], p]]
```

Out[55]=
$$\frac{(1+\text{eps})\ \text{Bb}^{(0,0,0,1,0)}[\text{b, f, eps, p, phi0}]}{\text{b eps}}$$

In[56]:=
```
Simplify[
  D[A[Bb[b, f, eps, p, phi0], b, phi0, b, f, eps], p] == (1 + eps) D[Bb[b, f, eps, p, phi0], p] / (b eps)]
```

Out[56]= True