In [ ]:
```
import numpy as np
import matplotlib.pyplot as plt
import math
```

In [ ]:
```
v_max = 53.63
B = 0.556
v = np.arange(0, v_max)
f_B = B*(v**2)
plt.plot(v, f_B, linewidth = 3)

# Linear approximation at v = 30 m/s
TS_fB = B*(30**2) + 2*B*30*(v-30)
plt.plot(v, TS_fB)
fB30 = B*(30**2)
plt.scatter(30, fB30, c='orange')

plt.title('$f_B(v)$ vs. v')
plt.xlabel('v ($m/s$)')
plt.ylabel('$f_B(v)$')
plt.legend(['$f_B$', 'Linear approximation', 'v=30'])
```

Out[ ]:
```
<matplotlib.legend.Legend at 0x14fafa60850>
```