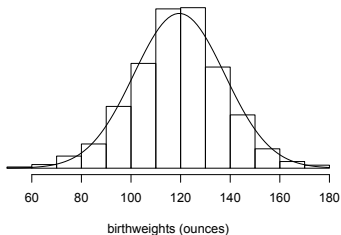
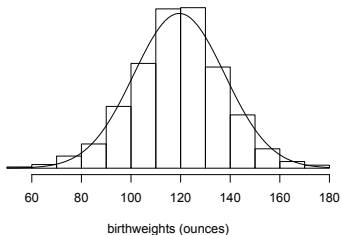


A roughly normal data histogram

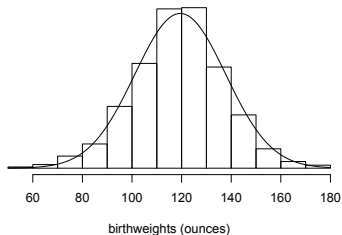


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Approximation is OK, but clearly off in some ways.

A typical calculation

A distribution of weights is approximately normal with mean 119.5 ounces and SD 18.3 ounces. Approximately what percent of the weights are between 100 ounces and 140 ounces?

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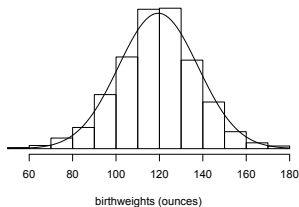
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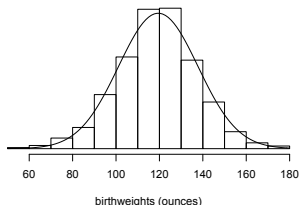
The applet says the area is **72.63%. Done.**

In fact, 859 out of the 1174 birthweights on the list were in that range. That's 73.1%, so the approximation is not bad.

When is the approximation good?



When is the approximation good?

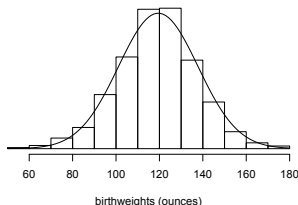


between 100 ounces and 140 ounces:

actual: **73.1%**

normal approximation: **72.6%**

When is the approximation good?



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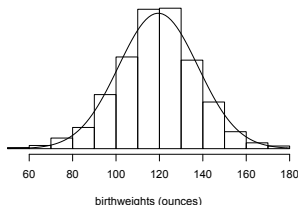
between 110 ounces and 130 ounces:

actual: **43.1%**

normal approximation: **41.4%**

[standard units: -0.52 and 0.57]

When is the approximation good?



between 100 ounces and 140 ounces:

actual: **73.1%** normal approximation: **72.6%**

between 110 ounces and 130 ounces:

actual: **43.1%** normal approximation: **41.4%**

[standard units: -0.52 and 0.57]

The normal approximation underestimates in the 110-130 range.