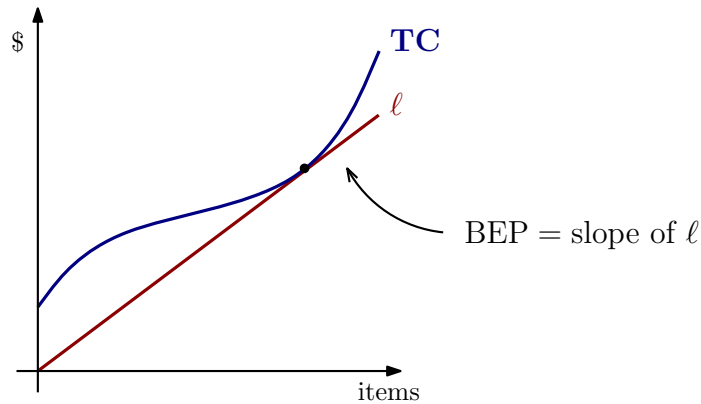## Breakeven price and shutdown price — part 2
(or, "Why does BEP have anything to do with where MC and AC cross?")

Remember that the *breakeven price* is the transition price between some possibility for profit and no possibility for profit.
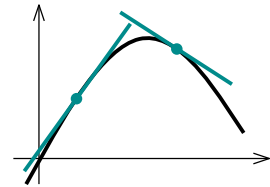
We usually measure BEP by finding the slope of the *lowest* diagonal line that still hits TC.

There's two interesting things about ℓ:

1. It's a diagonal line through TC.
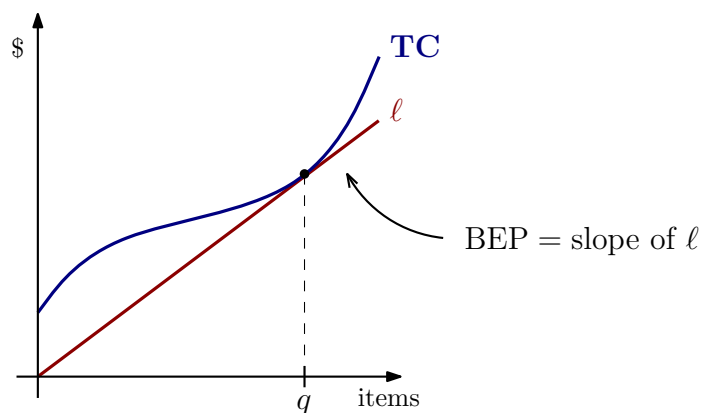2. It's a tangent line to TC. ("Tangent" because it just touches the graph)

Other examples of tangent lines:

The slope of a *diagonal* line through TC is average cost (AC). That's because AC is the overall rate of change of TC.

The slope of a *tangent* line to TC is marginal cost, MC. (Well, approximately. We saw this in worksheet #9.)

Let q be the quantity where ℓ intersects TC:

Then what we have seen is that BEP is the value of AC at q, and it's also the value of MC at q. That means $AC(q) = MC(q) = BEP$. That's why you want to find where $AC = MC$ in order to find the breakeven price.

shutdown price Shutdown price is pretty much the same as breakeven price, except that we use VC instead of TC. Instead of AC, we instead have to talk about AVC, average variable cost. The result is that to find shutdown price, we try to find where $AVC = MC$.