Cost Relationships

Here's a diagram of the different cost functions and how they're related. The arrow from TC to VC, for instance, means that if you have the formula for TC, you can find the formula for VC.

$$AC \longleftrightarrow TC \longleftrightarrow VC \longleftrightarrow AVC$$

$$\downarrow$$

$$MC$$

If you have the formula for	and want to find	its formula is
AC	TC	TC(q) =
TC	AC	AC(q) = TC(q)/q
TC	MC	MC(q) =
TC	VC	VC(q) =
VC	TC	TC(q) =
VC	AVC	AVC(q) =
AVC	VC	VC(q) =

Multi-step questions

- 1. If you have the *AC* formula, how could you find a formula for *MC*?
- 2. If you have the *AVC* formula, how could you find a formula for *AC*?

Revenue Relationships

Handling revenue is a little simpler. Here's a diagram of the revenue functions and how they're related.

$$\begin{array}{c}
p \longleftrightarrow TR \\
\downarrow \\
MR
\end{array}$$

If you have the formula for... and want to find... its formula is...

p	TR	TR(q) =
TR	p	p(q) =
TR	MR	MR(q) =

Breakeven price and shutdown price

Breakeven price is:

- The lowest *value* of AC(q). *Example*: if $AC(q) = q^2 - 4q + 6$, what is BEP?
- The value of AC at the point where AC(q) = MC(q). Example: if $AC(q) = q^2 - 2q + 2$ and $MC(q) = 3q^2 - 4q + 2$, what is BEP?

Shutdown price is like breakeven price, but with *AVC* instead of *AC*.