Midterm 2 Concept Review

Business Terms

What are variable cost (VC) and fixed cost (FC)? How can you find VC and FC if you know the equation for TC?

What are average cost (AC) and average variable cost (AVC)? How can you find their equations if you know VC or TC?

What is marginal cost (MC)? How can you find the marginal cost from total cost?

How about marginal revenue (MR)?

Imagine you sell each item for $9, and each item costs you $8 to produce. What is the marginal cost? What is the marginal revenue?

How can you find the TR formula if you have the formula for price per item (p)?

How can you find maximum profit...
- ...if you know MR and MC?
- ...if you know TR and TC?
- ...if you have the profit equation, and it's quadratic (a parabola)?

How do you find when profit is zero?

How can you find breakeven price (BEP)...
- ...using MC and AC formulas?
- ...if you only know AC?

How can you find shutdown price (SDP)...
- ...using MC and AVC?
- ...if you only know AVC?

(hint: it's just like breakeven price, just with AVC instead of AC)

What is the TC formula if each item costs $m and you have $c in fixed costs? (see worksheet #10)

Algebra Techniques

If you have the graph of a linear function (a straight-line graph), how can you find its equation?

If you have an equation for $D(t)$, what does it take to get an equation for $D(t+5)$?

How can you find the interval where a quadratic function is increasing? decreasing?

How can you find the interval where one function is increasing and the other is decreasing?

How do you solve quadratic equations (equations with a t^2 or x^2 in them)?

How do you solve linear equations (only t or x appears, not t^2, $\sqrt{t}$, etc.)?
(for instance, $2x+5=3x-6$*)*

How can you find where two graphs cross?

How can you find where a quadratic function is highest or lowest?

How do you know when to use the quadratic formula, and when to use the vertex formula?

If $g(t)$ is a quadratic function, how can you find the times when $g(t)>4$?

How do you solve equations with square roots in them?

Distances and Speeds

How can you find a formula for average speed (AS) if you have the formula for distance vs. time?

How would you find the formula for average trip speed (ATS)?

Going the other way around, how can you find the distance function $D(t)$ if you just know ATS?

Say you have a formula for $D(t)$, the distance (in miles) a car travels after t minutes. How do you find...

...when the car has travelled 100 miles?
...how far the car travelled after 2 minutes?
...how far the car travelled between $t=3$ and $t=7$ minutes?

If you have the distance formulas for two cars (A and B, say), how do you find when A is 3 miles ahead of B?

How would you find when A and B are at the same place?

How would you find if A and B are *ever* at the same place?