Economics Beta Incentive compatibility Home **Ask Question** Questions Asked 3 years, 7 months ago Active 3 years, 3 months ago Viewed 119 times Tags I have a set of objects $A = \{a_1, a_2, a_3, \dots, a_m\}A = \{a_1, a_2, a_3, \dots, a_m\}$ and one player, who Users **Featured on Meta** proposes a vector of valuations $t = (t_1 \ t_2 \ t_3 \ \cdots \ t_m)t = (t_1 \ t_2 \ t_3 \ \cdots \ t_m)$ for the mm objects. TT is the Unanswered set of all such valuation types. Given TT I design an allocation function Meta escalation/response process update (March-April 2020 test results, next... $f: T \to [0,1]^m$ $f: T \to [0, 1]^m$ Creative Commons Licensing UI and Data Updates and a payment function $p:T\to\mathbb{R}$ Related $p: T \to \mathbb{R}$ Checking incentive compatibility of a mechanism The mechanism (f, p)(f, p) is said to be *Incentive compatible* if 2 Incentive compatibility: Weakly dominant $t(f(t)) - p(t) \ge t(f(t')) - p(t') \ \forall t, t' \in T$ (1) strategy versus Nash equilibrium? $t(f(t)) - p(t) \ge t(f(t')) - p(t') \ \forall t, t' \in T$ Mechanism Design: Proving that the expected utility is differentiable One can easily derive from the above eqaution that incentive compatibility implies the following: 2 Bayesian incentive compatibility for a general distribution $t(f(t)) + t'(f(t')) \ge t(f(t')) + t'(f(t))$ (2) Is a resource allocation problem in $t(f(t)) + t'(f(t')) \ge t(f(t')) + t'(f(t))$ (2) mechanism design a direct or indirect mechanism? that is, $(1) \Rightarrow (2)(1) \Rightarrow (2)$. **Hot Network Questions** Is the converse $((2) \Rightarrow (1)(2) \Rightarrow (1))$ true? Make the How does multiclassing work for an artificer? mechanism-design Conditional Constraint in MIP why 3/8 is not a compound time signature? share improve this question follow edited Feb 14 '17 at 2:19 asked Oct 17 '16 at 14:37 Abishanka Saha bank issuing structured products Bayesian **1,708** • 1 • 8 • 31 How to shade the two regions? Is it common practice to validate responses from 3rd party APIs? I have derived that p(t)p(t) is a function of f(t)f(t), that is if f(t) = f(t')f(t) = f(t') then p(t) = p(t')p(t) = p(t'). I am trying to analytically write p(t)p(t) as an implicit function of f(t)f(t). Please help – Steel welding options for a remote property? Abishanka Saha Oct 18 '16 at 5:50 Can the Shillelagh cantrip be active on two clubs add a comment How can I improve the UI/UX of this form? 1 Answer Active Oldest Votes Do you add extra oil when replacing eggs in baked First of all, the general form of the problem you got there is extremely demanding. In ★ What is the purpose of のある in 人気のある? multidimensional screening problems, analytically often all hell breaks loose in a sense that it is just Tautomer of acrolein not tractable. One way out might be this recent approach by Gabriel Carrol: Robustness and Separation in Multidimensional Screening (also provides an introduction that hints at the Formal or polite alternative for "f***ing around" intractibility of the problem). Do reviewers go over the calculations (i.e do the calculations themselves) when reviewing? Coming back to your question: (2)(2) does not imply (1)(1), because (2)(2) only depends on ffTerm for belief in the existence of soul(s) and you can add a transfer rule that is not IC. As a counterexample, consider a single good, m=1m=1. Take some strictly IC mechanism, (f,p)(f,p) and consider two types, tt and t't'. So, (1)(1)MATLAB vs. Python in industry is Does reduction of maximum hit points stick to the form it is applied to? U(t) := f(t)t - p(t) > f(t')t - p(t')In the world of Pokemon, how come the same U(t') := f(t')t' - p(t') > f(t)t' - p(t)attack has a different effect on a Pokemon in different episodes? U(t) := f(t)t - p(t) > f(t')t - p(t')U(t') := f(t')t' - p(t') > f(t)t' - p(t)What species will benefit most from humanity's having been here? and by construction (2)(2) holds as well. Let t' > t t' > t and a lager allocation probability Mar Should I buy a CPU or a GPU for doing f(t') > f(t)f(t') > f(t) is accompanied by a larger expected transfer, p(t') > p(t)p(t') > p(t) - f(t)calculations? otherwise tt would love to fake being t't'. Are thru axles enough protection for transporting a bike? Now, construct $f(s) = f(s)\tilde{f}(s) = f(s)$ for all $s \in Ts \in T$ and let $\tilde{p}(t) = p(t')\tilde{p}(t) = p(t')$ and Current status of axiomatic quantum field theory $\widetilde{p}(t') = p(t)\widetilde{p}(t') = p(t)$. Since (2)(2) only depends on the allocation function ff and these functions are the same in both mechanisms, (2)(2) holds for $(\widetilde{f}, \widetilde{p})(\widetilde{f}, \widetilde{p})$. Obviously, (1)(1) is How would a real life force field work? violated for the reason named above: What is the purpose of classifying fighters? $\widetilde{f}(t')t - \widetilde{p}(t') > \widetilde{f}(t)t - \widetilde{p}(t).$ $\tilde{f}(t')t - \tilde{p}(t') > \tilde{f}(t)t - \tilde{p}(t).$ Question feed To address your other problem (in your comment), use the integral formulation of expected utility. Rewriting (1)(1) yields, $f(t)(t - t') \ge U(t) - U(t') \ge f(t')(t - t')$ $f(t)(t-t') \ge U(t) - U(t') \ge f(t')(t-t')$ implying that $m{U}U$ is Lipschitz continuous, implying $m{U}U$ is differentiable a.e., and equals the integral over its derivative: $U(t) = U(\underline{t}) + \int_{t}^{t} f(s)ds$ $U(t) = U(t) + \int_{t}^{t} f(s)ds$

where t_t is the lowest possible type. Then, you rewrite,

$$f(t)t - p(t) = U(\underline{t}) + \int_{\underline{t}}^{t} f(s)ds$$
$$f(t)t - U(\underline{t}) - \int_{\underline{t}}^{t} f(s)ds = p(t).$$

$$f(t)t - p(t) = U(t) + \int_{t}^{t} f(s)ds f(t)t - U(t) - \int_{t}^{t} f(s)ds = p(t).$$

Suppose $\underline{t} = 0t = 0$, then

$$p(t) = p(0) + f(t)t - \int_0^t f(s)ds.$$
$$p(t) = p(0) + f(t)t - \int_0^t f(s)ds.$$

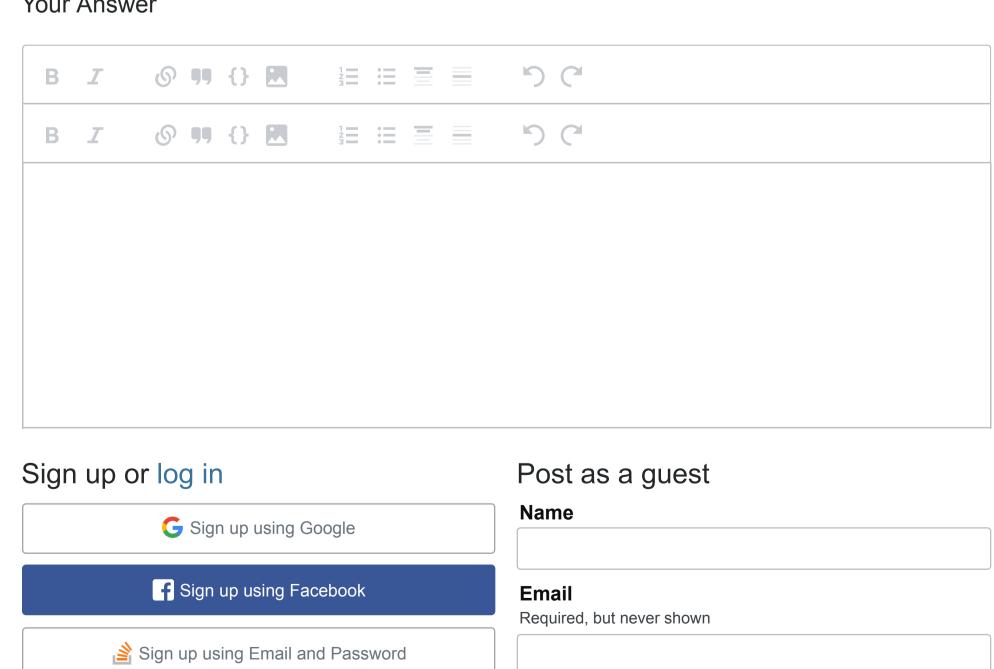
This implies the revenue equivalence theorem: If two auctions have the same allocation rule, payment functions (and thus revenue) can only differ by a constant. The same trick works for multiunit auctions with multi-unit demand, see, e.g., Krishna, Ch 14.

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answered Feb 13 '17 at 12:52

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