

A firm is planning to create an electric vehicle Gigafactory. This will have either 100 assembly machines (for a small facility) or 250 assembly machines (for a large facility). The current net revenue per machine is £28,000. Next year this will either rise to £37,500 (with a 65% probability) or fall to £11,500 (with a probability of 35%) – and stay there forever after. The variable cost for construction is £170,000/machine plus a fixed cost of £3,200,000 for a small facility or £29,000,000 for a large facility. Assume the factory is built this year and revenues are generated right away. The risk-free rate is 10%. Which facility will the company choose, and how much money will they make (in millions)?

**Answer**

**Solution**

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