

**MAF Corporate Finance 2009: MN50324:**

**Decision Tree exercise.**

A firm is considering investing in a new project. It requires initial investment of £10,000 at the end of date 0. Following investment, the firm can test the product in date 1 before launching it on the market at date 2. Testing will involve expenditure of £5,000 at the end of date 1. If it tests and launches the product, the product will be successful with probability 0.8. If it does not test, and launches the product, it will succeed with a probability of 0.5. If the project succeeds, it succeeds forever. If it fails, it fails forever.

The following table shows the cashflows (perpetuities) for success and failure.

Cash flows Per annum From end of date 2 forever	Success	Failure
Revenue	£10,000	£5,000
Variable costs	20% of revenue	20% of revenue
Fixed Costs	£2000	£2000

Ignore tax. The firm uses a discount rate of 10%.

- a) Should the firm take the project?
- b) Should the firm carry out testing?
- c) The marketing manager is pessimistic, and anticipates that testing will only increase the success probability to 0.6. Should the project now be taken?  
Should the firm carry out testing?
- d) The finance manager is optimistic, and believes that testing will ensure that the project is successful. However, he believes that variable costs have been underestimated, and should be 40% of revenue. What does he recommend?