# Payback Time & Cost Effectiveness

1. Explain what is meant by the term 'payback time'.

2. A new gas boiler for a house costs £3,000 but saves £250 per year in fuel costs. What is its payback time?

3. The cavity wall insulation in a house costs £600 to install. It has a payback time of 8 years. How much money does the insulation save each year in fuel costs?

4. In 2009 the Jones' spent £860 on gas heating their home. After spending £650 on loft insulation in 2010 the heating bill was £ 710
   a. How much money was saved in 2010?
   b. What is the payback time for the loft insulation?

5. Explain how the Jones' loft insulation works.

6. Determine if the following energy saving methods are cost effective over a 5 year period.

| Method | Cost | Annual savings | Savings | Cost effective? |
|---|---|---|---|---|
| Radiator Valves | £50 | £12 | | |
| New oil boiler | £2700 | £400 | | |

7. Which would be the most cost effective method if we consider a 10 year period? Show how you worked out your answer.

8. Give two reasons why you would install cavity wall insulation before double glazing.
   a. _____
   b. _____

9. Imagine that you've recently insulated your loft. Give a reason why your heating bill may still increase.

| Method | How it works | Cost (£) | Annual Savings (£) | Payback time (years) |
|---|---|---|---|---|
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