Cabreras Co is a construction company. It uses a large earth moving vehicle called the Beast to prepare foundations for buildings. It needs to decide whether the cheapest replacement interval for the Beast is three or four years.

The following details are available:

Cabreras Co purchases the Beast from a manufacturer for $800,000. payable one year after delivery. Its resale value will fall by 40% of the purchase price at the end of its first year of operation. The resale value will then reduce by 25% of its previous year's resale value for each further year of operation.

Yearly maintenance costs are $20,000 at the end of its first year of operations, rising by 5% per year. Maintenance must be provided in the year of sale.

Yearly fuel costs are $28,000 in the first year rising by $5,000 for each extra year it is operated.

If the Beast is operated beyond three years it is subject to a government safety and carbon emissions test. The test would be paid for and would take place at the beginning of the fourth year of operation. Correction of any faults discovered by this test is mandatory. There is an 80% chance that the test and remedial work will cost Cabreras Co $50,000, and a 20% chance it will cost $120,000.

Cabreras Co's cost of capital is 8%.

Ignore taxation.

(a) Calculate the equivalent annual cost of the three-year and four-year replacement intervals for the Beast and advise Cabreras Co which replacement interval to adopt. (11 marks)