

Exercise 2015-11 EF-00009(1) Financial Mathematics – Depreciation

(1) SA construction buys a new crane for R750 000. Calculate the value of the crane after 7 years if the depreciation is calculated on the reducing balance at 11% pa.

(2) A garden service buys new equipment at present (2008) which is valued at R6 000. The depreciation of the equipment is calculated at 15% pa on the reduced balance.

(a) Complete the following table [round off to the nearest R100]:

Year	2008	2009	2010	2011	2012	2013	2014
Time lapse in years							
Book value of equipment							

(b) Present the data in (a) graphically.

(c) Determine in which year the book value of the equipment will be halve the value of the original value.

(3) Your school needs a new school bus. The total cost for a new school bus is R654 000. They get two quotes. The first quote offer them a loan at 11,4% pa compound interest with the interest compounded semi-annually. The second quote offer them 12,3% pa yearly compounded interest. In both cases the loan will be over 54 months. The depreciation of the school bus is however 13% pa, calculated on the reduced balance. Calculate:

(a) Which of the above loan options will be the most advantageous?

(b) The book value of the school bus if the bus paid off in 54 months' time.

(4) A printer is purchased for R54 000. The depreciation of the printer is 13% pa.

(a) Calculate the book value of the printer after 4 years if the depreciation is calculated according the straight line method.

(b) Calculate the interest rate, according to the reduced balance method, for which the printer in (a) will have the same book value as in (a) after 4 years.

