Series and applications

Accumulated amounts and compound interest (1)

QUESTION **1**   Find the amount (to the nearest dollar), to which $P will accumulate if invested at r% per period for n periods:

a $P = 3000, r = 6, n = 4$

b $P = 7000, r = 8, n = 5$

c $P = 40\,000, r = 3, n = 7$

d $P = 800, r = 10, n = 12$

e $P = 100\,000, r = 7, n = 15$

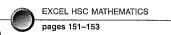**f** $P = 140\,000, r = 5.5, n = 25$

QUESTION **2**   Find the compound interest earned (to the nearest cent), if $P is invested at r% per period for n periods:

a $P = 9000, r = 4, n = 8$

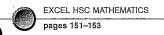**b** $P = 15\,000, r = 7.5, n = 3$

Series and applications

Accumulated amounts and compound interest (2)

QUESTION **1** $10 000 is deposited into a bank account and earns 5.25% p.a. interest compounded annually. How much to the nearest dollar is in the account at the end of 7 years, just after the final interest has been paid?

QUESTION **2** Find the amount to which $6000 accumulates if it is invested for 3 years, interest compounded quarterly at 2% per quarter.

QUESTION **3** The new price of a television is $1200. Assuming it depreciates in value at 15% p.a., find to the nearest dollar the estimated value of the television in five years time.

QUESTION **4** Find the compound interest earned if $15 000 is invested for 4 years, interest compounded monthly at 0.6% per month.

QUESTION **5**

a   Find, to the nearest dollar, the amount to which $2000 will accumulate if it is invested for 3 years, interest compounded quarterly at 2.5% per quarter.

b   If this accumulated amount is then re-invested for a further 3 years, interest compounded monthly at 0.5% per month, find the amount of the investment at the end of the 6 years.

Series and applications

Accumulated amounts and compound interest (3)

QUESTION **1** $4000 is invested at 9% p.a. interest, compounded annually. For how many years will it need to be invested to accumulate to more than $10 000?

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_____   _____

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QUESTION **2** In approximately how many years will a sum of money double, if invested at 8% p.a. interest, compounded annually?

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_____   _____

_____   _____

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QUESTION **3**

a Find, to the nearest cent, the compound interest earned on $8000 invested at 9% p.a. interest compounded annually for 4 years.

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b What annual rate of simple interest would produce the same result?

_____   _____

_____   _____

_____   _____

_____   _____

Page 159 1 a $3787 b $10 285 c $49 195 d $2511 e $275 903 f $533 875 2 a $3317.12 2 $3634.45
Page 160 1 $14 307 2 $7609.45 3 $532 4 $4989.15 [nearest cent] 5 a $2690 b $3219
Page 161 1 11 years 2 9 years 3 a $3292.65 b 10.3% [1 d.p.]