Year 12 Mathematics 
APPLICATIONS UNIT 3 
APPLECROSS 
Name: 
SECTION 1- 
Resource Free 
= 3 marks] 
a) 
Section 1 
Section 2 
Total 
FORMATIVE TEST 1 
Total 
10 
11 
21 
Working Time: 10 minutes 
n = 19 
State the first three terms in the sequence. 
b) Show that this is an arithmetic progression. 
c) Write the rule for the nth term of this sequence. 
2. Il, 2, I —4 marks] 
iii 
8 16 
Show that this is a geometric progression. 
Write the recursive rule for the sequence. 
Write the rule for the nth term of this sequence. 

3. 
• 3 marks) 
a) State the first three terms in the sequence. 
b) Label the sequence as an arithmetic progressicn', a geometric progressicn', or a firstorder 
linear recurrence relation. 
END OF SEC"ON ONE 

Year 12 Mathematics 
APPLICATIONS UNIT 3 
FOMATIVE TEST 1 
APPLECROSS 
SENIOR SCHOOL 
SECTION 2 - Resource Rich 
a. marksl 
11 
Working Time: 15 minutes 
Michael is growing cauliflowers in a large field. Every week the number of cauliflowers increases by 2% 
and Michael harvests 250. 
At the start of the first week of the year Michael had 6000 cauliflowers in the field. 
Round all answers to nearest whole number. 
a) Using this information, generate a sequence of terms that shows the number of cauliflowers at the 
end of each week. 
Cauliflowers 
Week 1 
Week 2 
week 3 
Week 4 
b) Write the rule for a sequence to represent this situation where Tm is the number of cauliflcnuers he 
has in the field at the end of each week. 
For how many weeks can Michael keep harvesting exactly 250 cauliflowers a week? 

After the 10th harvest, Michael notices his field is starting to 100k a little bare. He is worried his 
is not going to be Sustainable so Wants to give his field Some time to recover. 
d) Show that Michael need at least 12500 cauliflowers to make his harvest sustainable, 
e) HOW many weeks will Michael need to wait until he can start harvesting again? 
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