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**Answer all ELEVEN questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

- 1** The  $n$ th term of an arithmetic series is  $t_n$  and the common difference of the series is  $d$ .

Given that  $t_2 + t_9 = 0$  and that  $t_4 + t_6 + t_{10} = 14$

(a) (i) show that  $d = 4$

(ii) find the first term of this series.

(4)

A different arithmetic series  $A$  has first term 24 and common difference 6

For series  $A$ , the sum of the first  $2n$  terms is 3 times the sum of the first  $n$  terms.

(b) Find the value of  $n$ .

(5)



P 5 9 9 3 8 A 0 3 3 6

**Question 1 continued**

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**Question 1 continued**

(Total for Question 1 is 9 marks)



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