Finding and using the n^{th} term of a linear sequence

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MATHS-SCHOOL

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Name:

Find the n^{th} term of the sequences:

a) 4, 6, 8, 10, 12 …	2n + 2	g) 7, 13, 19, 25, 31 …	6n + 1
b) 3, 7, 11, 15, 19 …	4n – 1	h) -4, 4, 12, 20, 28 …	8n – 12
c) 9, 14, 19, 24, 29 …	5n + 4	i) -9, -4, 1, 6, 11 …	5n – 14
d) 0, 5, 10, 15, 20 …	5n – 5	j) 19, 16, 13, 10, 7 …	-3n + 22
e) 1, 9, 17, 25, 33 …	8n – 7	k) 2, -3, -8, -13, -18 …	-5n + 7
f) -3, -1, 1, 3, 5 …	2n – 5	k) 8, 3, -2, -7, -12 …	-5n + 13

Find the 1st, 3rd, 5th and 100th terms of the following n^{th} term sequences:

	1st Term	3rd Term	5th Term	100th Term
l) n + 8	9	11	13	108
m) 3n	3	9	15	300
n) 2n + 4	6	10	14	204
o) 3n – 1	2	8	14	299
p) – 4n + 10	6	-2	-10	-390
q) – 5n – 5	-10	-20	-30	-505
r) 8 – 4n	4	-4	-12	-392

Fully explain your answer for the following questions

s) Is 95 a term in the sequence 2, 5, 8, 11 … ?

Yes, n = 32

t) Is 117 a term in the sequence 5, 11, 17, 23 … ?

No, n = 19.667

u) Is 250 a term in the sequence 40, 55, 70, 85 … ?

Yes, n = 15

v) Is 228 a term in the sequence 6, 14, 22, 30 … ?

No, n = 28.75

Exam question:

Here are the first five terms of a number sequence. 8, 11, 14, 17, 20

a) Write an expression, in terms of n, for the nth term of this number sequence.

3n + 5

b) Determine if 245 is in this sequence and if so, which position it appears.

Yes, n = 80