Sequences: nth Term

Workout

Question 1
(a) 3n+2   (b) 5n+4   (c) 2n-1   (d) 4n+6
(e) 5n-3   (f) 6n-3   (g) 20n-9   (h) 3n+17
(i) 6n-5   (j) 25n+75  (k) 9n+4   (l) 0.5n+1

Question 2
(a) -3n+13  (b) -2n+8  (c) -5n+14  (d) -10n+30
(e) -6n+11  (f) -n+6   (g) -7n+1   (h) -3n-7
(i) -0.5n+3

Question 3:
1)  (a) 302  (b) 504  (c) 199  (d) 406  (e) 497  (f) 597
    (g) 1991 (h) 317  (i) 595  (j) 2575 (k) 904  (l) 51
2)  (a) -287 (b) -192 (c) -486 (d) -970 (e) -589 (f) -94
    (g) -699 (h) -307 (i) -47

Question 4
(a) 8,13,18,23,28  (b) 11,13,15,17,19  (c) 1,4,7,10,13
(d) 4,14,24,34,44  (e) 19,28,37,46,55  (f) 9,10,11,12,13
(g) 13,6,-1,-8,-15 (h) 45,40,35,30,25  (i) 7.5,11,14.5,18,21.5

Question 5
(a) Yes
(b) No
(c) No
(d) No
(e) No

Question 6
Sequence (b)
Question 7

(a) \( \frac{2n-1}{2n} \)  
(b) \( \frac{4n+5}{5n+6} \)  
(c) \( \frac{3n}{5n+2} \)  
(d) \( \frac{n}{n+1} \)  
(e) \( \frac{5n+15}{11n+10} \)  
(f) \( \frac{-2n+101}{-5n+105} \)

Question 8

(a) \( \frac{39}{40} \)  
(b) \( \frac{85}{106} \)  
(c) \( \frac{10}{17} \)  
(d) \( \frac{20}{21} \)  
(e) \( \frac{1}{2} \)  
(f) \( \frac{61}{5} \)

Apply

Question 1

200

Question 2

2694

Question 3

-150

Question 4

Sequence 1 - Sometimes multiples of 7
Sequence 2 – Never multiples of 7
Sequence 3 – Always multiples of 7
Sequence 4 - Sometimes multiples of 7

Question 5

(a) They are adding on the difference each time – \( 7n+1 \)
(b) 95 is not a multiple of 7. Set \( 7n+1 = 96 \) and work out if we can get an \( n \) term