

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