Textbook 287a

Answers

1a) 5 b) 8 c) "to get the next term, add the previous 2"

2a) 16, 26, 42 b) 24, 39, 63 c) 32, 52, 84

d) 99, 160, 259 e) 46, 75, 121 f) 9, 16, 25

g) 250, 405, 655 h) -11, -18, -29 i) 10.5, 17.1, 27.6

j) 7.18, 11.93, 19.11 k) -6.9, -9.8, -16.7 l) -3.1, -5, -8.1

m) 1, $1\ ^{7}/_{11}$, $2\ ^{7}/_{11}$ n) $^{53}/_{12}$, $^{85}/_{12}$, $^{23}/_{2}$ o) $^{11}/_{10}$, $^{19}/_{10}$, 3

3a) 7 b) 15 c) 40

d) 1.2 e) 38.1 f) 15.5

g) -1.8 h) 7.6 i) -0.75

Apply

1a) 14a, 23a, 37a, 60a b) 15x + 3y, 24x + 5y, 39x + 8y, 63x + 13y

c) 6a, 8a, 14a, 22a d) 4y + 2z, 7y + 3z, 11y + 5z, 18y + 8z

e) 8x – 7y, 14x – 13y, 22x – 20y, 36x – 33y f) x + 2y, x + 3y, 2x + 5y, 3x + 8y

2a) 7 b) 11

c) Sequence is 3, 4, 7, 11, 18, 29, 47, 76, 123, 199…

Sum of these first ten terms is 517

The seventh term is 47.

47 x 11 = 517, showing that Beth is correct

3) 1^{st} Term: x

2^{nd} Term: y

3^{rd} Term: x + y

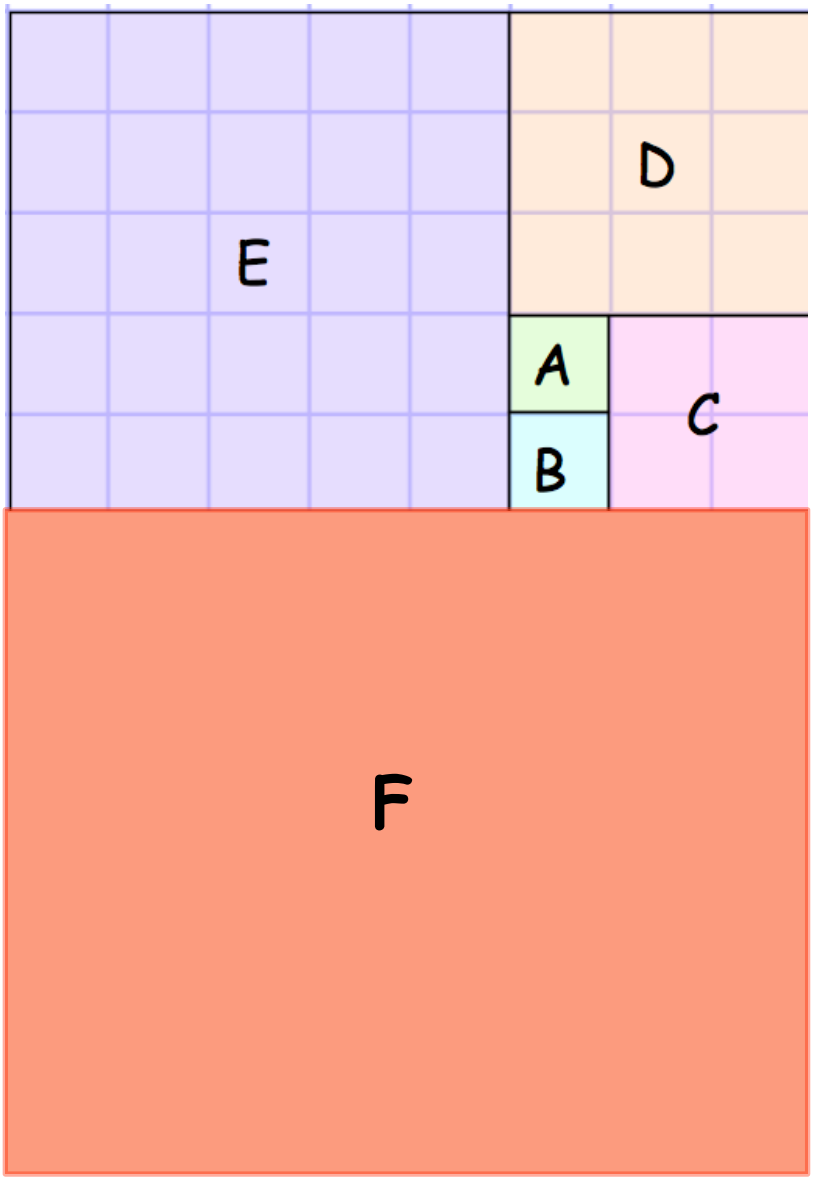
4^{th} Term: x + y + y = x + 2y

The sequence continues: 2x + 3y, 3x + 5y, 5x + 8y, 8x + 13y, 13x + 21y, 21x + 34y

Sum of the first 10 terms = 55x + 88y

11 times the 7^{th} term = 11(5x + 8y) = 55x + 88y

4)



b) 8

c) 13

d) 21

e) They are all part of the Fibonacci sequence, starting 1, 1, 2, 3,…..

5a) $8 \div 5 = 1.6$ $13 \div 8 = 1.626$ $21 \div 13 = 1.6153\ldots$

b) Each term is around 1.6, and the sequence appears to be converging

The limit of this sequence is the “Golden Number” or “Golden Ratio”, usually called ϕ (“phi”)