Name:

Exam Style Questions

Fibonacci

Corbettmaths

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 287a

Answers and Video Solutions

1. The next term in the sequence below is found by adding the two previous terms.

10 15 25 40 65

Find the next two terms.

$15 + 25 = 40$

$40 + 25 = 65$

40 and 65

(2)

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2. The next term in this Fibonacci sequence is found by adding together the two previous terms.

2 2 4 6 10

Work out the next two terms.

$4 + 6 = 10$

$10 + 6 = 16$

10 and 16

(2)

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3. Here are the first five terms of a Fibonacci sequence.

3 4 7 11 18 29

Write down the next two terms of the sequence.

$11 + 18 = 29$

$29 + 18 = 47$

29 and 47

(2)

4. A Fibonacci sequence starts 2 −7 -5 -12

Work out the next two terms.

$2 + (-7) = -5$

$-7 + (-5) = -12$

-5 and -12

(2)

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5. Here are the first three terms of a Fibonacci sequence.

235 366 601 967

Write down the next two terms of the sequence.

$366 + 601 = 967$

$967 + 601 = 1568$

967 and 1568

(2)

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6. The next term in this Fibonacci sequence is found by adding together the two previous terms.

2 9 11 20 31

Work out the first three terms of the sequence

2, 9 and 11

(2)

7. Here are the first and fourth terms of a Fibonacci sequence.

1 ... 13 ... 14 ... 27

□ 1+□

Find the second term of the sequence.

□ + 1 + □ = 27

2 × □ = 26

□ = 13

13

(2)

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8. The fifth and sixth terms of a Fibonacci sequence are shown below.

-12 ... 8 ... -4 ... 4 ... 0 ... 4

Find the first term of the sequence.

-12

(2)

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9. The first three terms of a Fibonacci sequence are

x $3x$ $4x$ $7x$ $11x$

Find the 5th term of the sequence.

11x

(2)

10. Hare are the first two terms of a Fibonacci sequence

y 6 $y+6$ $y+12$

Work out the 4th term of the sequence

$y+12$

(2)

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11. The third term of a Fibonacci sequence is –12
The fifth term of the same sequence is 41

Work out first term of the sequence

-77 65 -12 53 41

-77

(3)

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12. Shown below are the first two terms of a Fibonacci sequence

x y $x+y$ $x+2y$

Work out an expression for the fourth term of the sequence.

$x+2y$

(2)

13. The first term of a Fibonacci sequence is x
The third term of the sequence is $2y$

Work out an expression for the fifth term of the sequence.

$x \quad 2y-x \quad 2y \quad 4y-x \quad 6y-x$

$6y-x$

(3)

14. The second term of a Fibonacci sequence is 27
The fourth term of the sequence is 60.

$6 \quad 27 \quad 33 \quad 60 \quad 93$

Find the sum of the first, third and fifth terms of the sequence.

$6 + 33 + 93 = 132$

132

(3)

15. Here are the first three terms of a Fibonacci sequence

$3x$ $4x$ $7x$ $11x$ $18x$ $29x$

The difference between the third and sixth term of the sequence is 132

Work out the value of x.

$29x - 7x = 22x$

$132 \div 22 = 6$

6

(4)

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16. Here are the third and fourth terms of a Fibonacci sequence.

$-\frac{17}{6}$ $\frac{11}{3}$ $\frac{5}{6}$ $\frac{9}{2}$

Find the first term of the sequence.

$\frac{9}{2} - \frac{5}{6}$

$\frac{27}{6} - \frac{5}{6} = \frac{22}{6}$

$= \frac{11}{3}$

$\frac{5}{6} - \frac{11}{3}$

$\frac{5}{6} - \frac{22}{6} = -\frac{17}{6}$

$-\frac{17}{6}$

(4)