

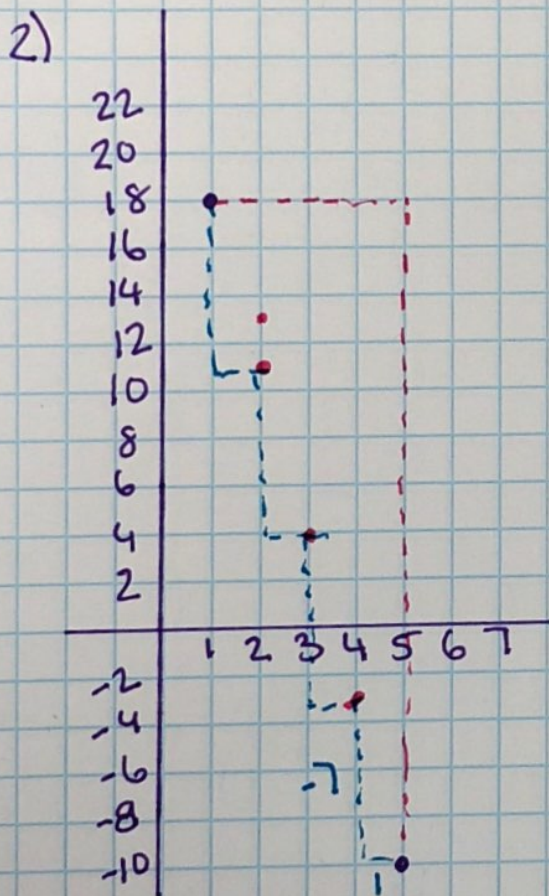
x	1	2	3		← n
y	5	8	11		← f(n)

$\xrightarrow{+3}$ $\xrightarrow{+3}$

5, —, 11

$$m = \frac{3}{1} = 3 \quad d = 3$$

$$\frac{11 - 5}{2} = \frac{6}{2} = 3$$



x	1	2	3	4	5	...	n
y	18	11	4	-3	-10	...	f(n)

$\xrightarrow{-7}$ $\xrightarrow{-7}$ $\xrightarrow{-7}$ $\xrightarrow{-7}$

$$m = \frac{-10 - 18}{4} = \frac{-28}{4} = -7$$

$$m = \frac{-7}{1}$$

$$d = -7$$

$$d = \frac{f(n) - f(1)}{n - 1}$$

x	1	...	n
y	f(1)		f(n)

Here are a few more arithmetic sequences with missing terms. Complete each table, either using the method you developed previously or by finding a new method.

5.

x	1	2	3	4
y	50	62	74	86

Handwritten annotations: $f(1)$ with an upward arrow under 50, $f(n)$ with an upward arrow under 86, and a downward arrow labeled n above 4.

$$d = \frac{86 - 50}{4 - 1}$$

$$= \frac{36}{3} = 12$$

6.

x	1	2	3	4	5	6
y	40	34	28	22	16	10

$$d = \frac{10 - 40}{6 - 1}$$

$$= \frac{-30}{5} = -6$$

7.

x	1	2	3	4	5	6	7	8
y	-23	-19	-15	-11	-7	-3	1	5

$$d = \frac{5 - (-23)}{8 - 1}$$

$$= \frac{28}{7} = 4$$

8. The missing terms in an arithmetic sequence are called "arithmetic means". For example, in the problem above, you might say, "Find the 6 arithmetic means between -23 and 5". Describe a method that will work to find arithmetic means and explain why this method works.