

Notes 3-6

Sec 1 H

Find the Missing Term

Unit 3

Steps for finding the missing term in an arithmetic sequence:

① Find the CROC $\frac{y_2 - y_1}{x_2 - x_1}$

② Use the CROC to fill in the blanks

Ex 1:

x	1	2	3
$f(x)$	5	8	11

$$\frac{11 - 5}{3 - 1} = \frac{6}{2} = 3$$

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

Ex. 2:

x	1	2	3	4	5
$f(x)$	18	11	4	-3	-10

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

$$\frac{18 - 10}{1 - 5} = \frac{8}{-4} = -2$$

CROC: -7

Ex. 3:

x	1	2	3	4	5	6	7
$f(x)$	12	9	6	3	0	-3	-6

$\xrightarrow{-3}$ $\xrightarrow{-3}$

$$\frac{12 - 6}{1 - 2} = \frac{6}{-1} = -6$$

CROC: -3

Steps for finding the missing term in an geometric sequence:

① Find the common ratio

- Count how many n's (jumps) we need = Exponent

$$n^{\text{Exponent}} = \frac{\text{Last}}{\text{First}}$$

② Fill in the blanks

Ex 4:

x	1	2	3
$f(x)$	3	6	12

$$n^2 = \frac{12}{3}$$

$$\sqrt{n^2} = \sqrt{4}$$

$$n = 2$$

Ex. 5:

x	1	2	3	4
$f(x)$	7	35	175	875

$$n^3 = \frac{875}{7}$$

$$n^3 = 125$$

$$n = 5$$

Ex. 6:

x	1	2	3	4	5
$f(x)$	6	12	24	48	96

$$n^4 = \frac{96}{6}$$

$$n^4 = 16$$

$$n = 2$$