

ARITHMETIC SEQUENCE

NAME THE NEXT FOUR TERMS OF :

A) 3, 5, 7, 9, 11, 13, 15

B) 3, 12, 21, 30, 39, 48, 57

C) 4, 9, 14, 19, 24, 29, 34

D) 0, 4, 8, 12, 16, 20, 24

E) 3, -5, -13, -21, -29, -37, -45

F) 2, $1\frac{1}{2}$, 1, $\frac{1}{2}$, 0, $-\frac{1}{2}$, -1

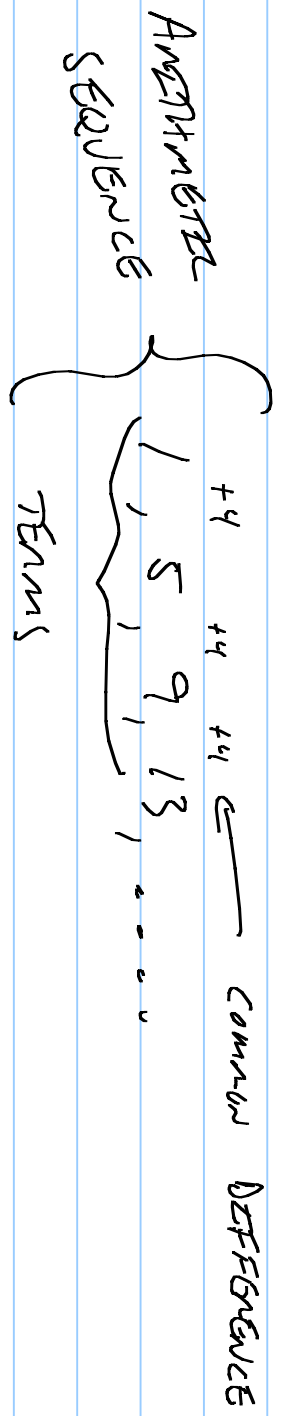
- WE ADDED THE COMMON DIFFERENCE TO THE

PREVIOUS TERM TO GENERATE THE ARITHMETIC SEQUENCE

DEFN: "THE NUMBER OBTAINED BY SUBTRACTING ANY TERM

FROM THE NEXT TERM IS A CONSTANT, THE CONSTANT

IS THE COMMON DIFFERENCE".



WE FIND 3 TERM BETWEEN 7 AND 51

5640

7, 18, 29, 40, 51

STEPS ① TAKE THE DIFFERENCE BETWEEN THE 1ST AND

1ST TERM

② INCREASE THE DIFFERENCE BY THE NUMBER OF STEPS BETWEEN THEM

$$51 - 7 = 44 \div 4 = 11 \leftarrow \text{COMMON DIFFERENCE}$$

THE RYAN PUT \$50 INTO A BANK ACCOUNT AND ADDS

\$20 EACH MONTH FOR 6 MONTHS. HOW MUCH DOES

HE HAVE? WHAT'S THE FORMULA?

$$\underline{\text{Solve}} \quad 50 + (6 \times 20) = 170$$

GENERAL TERM FORMULA

$$t_n = a + (n-1)d$$

$$a = 1^{\text{st}} \text{ TERM}$$

$$n = \# \text{ OF TERM (TOTAL)}$$

d = COMMON DIFFERENCE

t_n = LAST TERM

$$\text{So... } t_n = a + (n-1)d$$

$$t_7 = 50 + (7-1)20$$

$$t_7 = 50 + (6)20$$

$$t_7 = 50 + 120$$

$$t_7 = 170$$

THE 5, 8, 11, ..., 41 WHAT TERM NUMBER IS 41?

SOLN

$$t_n = a + (n-1)d$$

$$41 = 5 + (n-1)3$$

$$41 = 5 + 3n - 3$$

$$41 = 2 + 3n$$

$$-2 \quad -2$$

$$\frac{39}{3} = \frac{3n}{3}$$

$$13 = n$$

THE 3RD TERM IS 45, 10TH TERM IS 122, FIND

THE COMMON DIFFERENCE.

$$\underline{\text{SOLN}} \quad t_n = a + (n-1)d$$

$$122 = 45 + (8-1)d$$

H/W

$$122 = 45 + 7d$$

Ru 19 # 1-9, 11-15

$$\frac{77}{7} = \frac{7d}{7}$$

$$11 = d$$