

Algorithms Exercise

18/5/2023

Computer Science

MAT 101

Question 2

Sum of the A.P

180, 175, 170, ... 25

Sol

$$S_n = n/2 (a_1 + a_n)$$

$$a_n = a_1 + (n-1)d$$

$$= 180 + (n-1) - 5$$

$$= 180 - 5n + 5$$

$$a_n = 185 - 5n$$

$$25 = 185 - 5n$$

$$185 - 25 = 5n$$

$$160 = 5n$$

$$n = 32$$

$$S_{32} = \frac{32}{2} (a_1 + a_{32})$$

$$= 16 (180 + 25)$$

$$= 16 (205)$$

$$= 3280$$

↵

Question 3

from equation from root  $1/2$  and  $3/2$

$$(x - 1/2)(x - 3/2) = 0$$

$$x^2 - 3x/2 - x/2 + 3/4 = 0$$

$$x^2 - 2x + 3/4 = 0$$

$$x^2 - 2x = -\frac{3}{4}$$

$$4(x^2 - 2x) = -3$$

$$4x^2 - 8x + 3 = 0$$