01/07/21

HW

1. Find the cardinal number of the following sets:

(i) $A_1 = \{-2, -1, 1, 3, 5\}$

$= n(A) = \underline{5}$

(ii) $A_2 = \{x : x \in N \text{ and } 3 \leq x < 7\}$

$=$ elements $= \{3, 4, 5, 6\}$

$\therefore n(A) = \underline{4}$

(iii) $A_3 = \{p : p \in W \text{ and } 2p - 3 < 8\}$

$= 2p - 3 < 8$

$= 2p < 8 + 3$

$2p < 11$

$p < \frac{11}{2}$

$p < 5.5$

$\therefore P = \{1, 2, 3, 4, 5\}$

~~$n = A$~~ $n(A_3) = \underline{6}$

(iv) $A_4 = \{b : b \in z \text{ and } -7 < 3b - 1 \leq 2\}$

$= -7 < 3b - 1 \leq -2$

$= -7 + 1 < 3b \leq -2$

$= -6 < 3b \leq -2$

$= -2 = \frac{-6}{3} < b \leq \frac{-1}{3} = -2$

$= -2 < b \leq -1$

$= -2 < b \leq -1$

$n(A_4) = \{-1, 0, 1\}$ $b = \{-1, 0, 1\}$

$n(A_4) = \underline{3}$

2. If P = {P : P is a ~~letter~~ letter in the word 'PERMANENT'}, find n(P).

= Elements of set = P = {P, E, R, M, A, N, E, N, T}

∴ n(P) = 9