2017 P2Q8(i)

$0.1\,pc \cong 3.09 \cdot 10^{15}\ m$

$: 10^6 \frac{m}{sec}$

$3.09 \cdot 10^9$ SEC FOR EACH 0.1 pc JOURNEY

$: 60^2 : 24 : 365$

97.8 YR FOR EACH HOP.

WE HAVE A 3D RANDOM WALK.

(EXPECTED) DISTANCE FROM ORIGIN: D

NUMBER OF STEPS: N

LENGTH OF EACH STEP: L

$$D = \sqrt{N}L \Rightarrow N = \left(\frac{D}{L}\right)^2 = \left(\frac{100}{0.1}\right)^2 = 10^6 \text{ STEPS}$$

$\cdot (97.8 + 10) \approx 110$

$1.1 \cdot 10^8$ YRS

BETWEEN LEAVING X & ARRIVING AT Y.

NUMBER OF STARS IN GALAXY: $\frac{4}{3} 100^3 \pi \cdot 10 \cong$

$\cong 4.2 \cdot 10^7$

ALIENS VISITED 10^6 STARS.

THEY FOUND 10 PLANETS.

FRACTION WHICH IS HABITABLE: 10^{-5}.