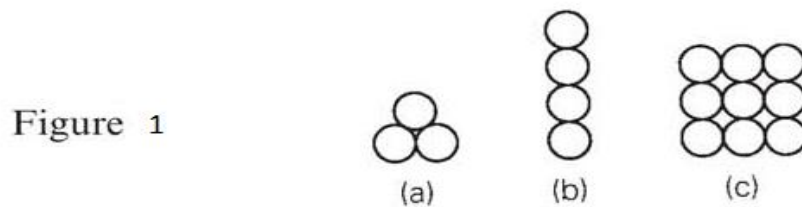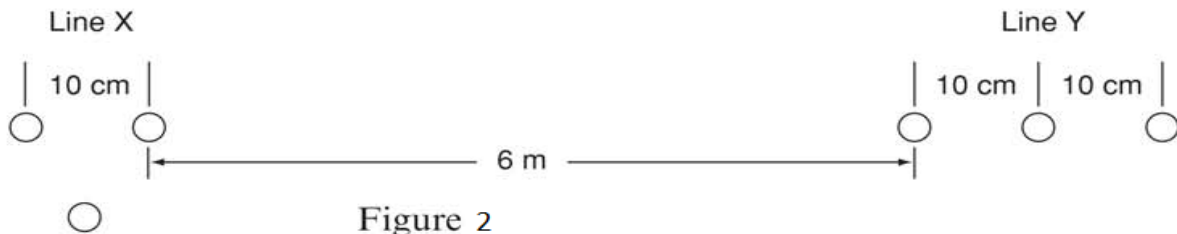1-

Determine the GMR of each of the unconventional stranded conductors shown in Figure 1 . All strands have the same radius r.
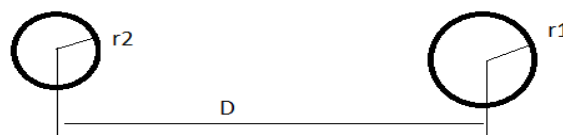
Figure 1

(a)   (b)   (c)

2-

The conductor configuration of a bundled single-phase overhead transmission line is shown in Figure 2 . Line X has its three conductors situated at the corners of an equilateral triangle with 10 cm spacing. Line Y has its three conductors arranged in a horizontal configuration with 10 cm spacing. All conductors are identical, solid-cylindrical conductors each with a radius of 2 cm. Find the equivalent representation in terms of the geometric mean radius of each bundle and a separation that is the geometric mean distance.

Line X

10 cm

6 m

Line Y

10 cm   10 cm

Figure 2

Consider an equivalent line similar to the line shown as follow, find r1, r2 and D

r2

r1

D

3

Find the GMR of a stranded conductor consisting of six outer strands surrounding and touching one central strand, all strands having the same radius r.

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