

1 解答

[問 1] 1920

[問 2] $25.3_{(8)}, 21.375_{(10)}$

[問 3] (1) $\log_3 a_2 = 2, \log_3 a_3 = -2, \log_3 a_4 = 6$

(2) $a_n = 3^{\frac{(-2)^n}{3} + \frac{2}{3}}$

[問 4] $(-1, 3), (\sqrt{2}, 2\sqrt{2})$

2 解答

[問 1] $p_3 = \frac{4}{27}, p_6 = \frac{16}{729}$

[問 2] $p_n = 2^{\frac{2^{\frac{n}{2}}}{3^n}} = 2^{\left(\frac{2}{9}\right)^{\frac{n}{2}}}$

[問 3] $p_n = \frac{2^{\frac{n+1}{2}}}{3^n} = \frac{2}{3} \left(\frac{2}{9}\right)^{\frac{n-1}{2}}$

[問 4] n が奇数の場合, $c_n = \frac{16}{21} \left\{ 1 - \left(\frac{2}{9}\right)^{\frac{n-1}{2}} \right\}$, n が偶数の場合, $c_n = \frac{16}{21} \left\{ 1 - \frac{15}{8} \left(\frac{2}{9}\right)^{\frac{n}{2}} \right\}$

[問 5] $\frac{16}{21}$

3 解答

[問 1] $|\overrightarrow{BC}|=5, |\overrightarrow{OD}| = 13$

[問 2] 24

[問 3] $\overrightarrow{OQ} = t^2(\overrightarrow{OA} + \overrightarrow{OB} + \overrightarrow{OC})$

[問 4] 最大値 27, $t = \frac{3}{4}$

4 解答

[問 1] $a_0 = e - 1$

[問 2] 証明略

[問 3] 証明略

[問 4] 証明略

[問 5] 証明略