1. $S_n = \frac{a_1(r^n-1)}{r-1} = \frac{2(2^n-1)}{2-1}$

$510 = 2(2^n-1)$

$256 = 2^n$

$8 = n$ #

3. $a_{n+2} - a_n = 3$

$a_{1+2} - a_1 = 3$

$a_3 - a_1 = 3$

$a_1 + 2d - a_1 = 3$

$d = \frac{3}{2}$ — ①

$a_1 + a_2 = 10$

$a_1 + a_1 + d = 10$

$2a_1 + d = 10$

$2a_1 + \frac{3}{2} = 10$

$a_1 = \frac{17}{4}$ — ②

$S_n = \frac{n}{2}(2a_1 + (n-1)d)$

$S_{40} = \frac{40}{2}(2(\frac{17}{4}) + (40-1)\frac{3}{2})$

$= 1340$ #

4. $11^3 = 1331 = 121 \mod 1210$

$11^{1210} = 1331 \mod 1210$

5. F_1 (3, 9), (3, 5), F_2 (3, 1)

$m = \frac{9-5}{3-0} = \frac{4}{3}$

$y - y_1 = m(x - x_1)$

$y - 5 = \frac{4}{3}(x - 0)$

$4x - 3y + 15 = 0$

$d \frac{|4(3) - 3(1) + 15|}{\sqrt{4^2 + 3^2}} = \frac{24}{5}$ #

6. $(f \circ g)'(x) = 3x^2 + 1$

$(f \circ g)(x) = x^3 + x + C$ — ①

$f(x) = 3x + 1$

$(f \circ g)(x) = f(g(x))$

$= 3g(x) + 1$

① = ②

$C = 4$

$3g(x) + 1 = x^3 + x + 4$

$g(x) = \frac{1}{3}(x^2 + x + 3)$

$\int_0^1 g(x)dx = \frac{5}{4} = 1.25$ #

7. $1 - x < -\frac{3}{7} < 7 - x$

$1 < x - \frac{3}{7} < 7$

$1\frac{3}{7} < x < 7\frac{3}{7}$

9. (-1, 4), -4, -1, 2

10. $t = \frac{f(t+h) - f(t)}{h}$ untuk $h \to 0$

$= \frac{1}{h}\left[\frac{8t+8-8t-8h-8}{(t+h+1)(t+1)}\right]$

$= \frac{-8}{(t+1)(t+1)}$

$t = 3 : \frac{-8}{(4)(4)} = -\frac{8}{16} = -\frac{1}{2}$ #

11. $x^{\log_5 x^2} = \frac{25}{x^3}$

$\log_5 x^{\log_5 x^2} = \log_5 \left|\frac{25}{x^3}\right|$

$(\log_5 x^2)(\log_5 x) = \log_5 25 - \log_5 x^3$

$a = \log_5 x$

$2a^2 + 3a - 2 = 0$

$(2a - 1)(a + 2) = 0$

$a = \frac{1}{2} - 2 \rightarrow \log_5 x = \frac{1}{2}, -2$

$x = 5^{\frac{1}{2}}, 5^{-2}$

$= \sqrt{5}, \frac{1}{25}$ #

12. nilai 40% = 320

$320 + 800 = 1120$

$1120 \times 2 = 2240$ um #

13. $\frac{40+1}{2} = 20.5$

$\frac{\#20 + \#21}{2} = \frac{62 + 60}{2}$

$= 61$ #

14. $P(A) = 2^4$

$= 16$

$|A - P(A)| = \{\emptyset, 0\} = 2$

$|P(A) - A| = 16 - 4 = 12$

$12 \times 2 = 24$

[illegible]

20. $50 = 2 \times 5^2$

$600 = 2^3 \times 3 \times 5^2$

a, b มี 5^2 เป็นตัวประกอบ $\langle\ ^{2}_{2^3}$

$a = 2 \times 3 \times 5^2 = 150$

$b = 2^3 \times 5^2 = 200$

$a + b = 350$ #

\# 13 จำนวน

16. S = 6, 16, 36, 46, 56, 62, 64, 66, 68, 76, 86, 96, 60

$= \frac{13}{99}$

17. $a \leq 7$

$(7 \times b) + c$ ~~a~~ $(7 \times 9) + 9 = 72$ ∴ $a \neq 0$

มากสุดก่อน

$a = 7$: $(7 \times b) + c = 24 \rightarrow b = 3, c = 3 \rightarrow 7 + 3 + 3 = 13$ #

18. ใน 6 วัน ข + ญ + ก = 1 ของงาน

1 วัน 〃 $\frac{1}{6}$ 〃

24 วัน ข คนเดียว 1 〃

1 วัน 〃 $\frac{1}{24}$ 〃

1 วัน ญ + ก $\frac{1}{6} - \frac{1}{24} = \frac{1}{8}$ 〃

4 วัน ข + ญ + ก $4 \times \frac{1}{6} = \frac{2}{3}$ 〃

เหลืองาน $1 - \frac{2}{3} = \frac{1}{3}$ ของงาน

$\frac{1}{8}$ ของงาน ญ + ก = 1 วัน

$\frac{1}{3}$ ของงาน ญ + ก $= 1 \times \frac{1}{3} \times 8$

$= 2.67$

≈ 3 วัน #

(19) $\overset{5}{\cancel{N}} = \frac{\cancel{N_0}\ 640}{2^n} \rightarrow n = 7$

$\overset{7}{\cancel{n}} = \frac{T}{\cancel{t_{1/2}}\ 4.5 \times 10^9}$

$T = \frac{63 \times 10^9}{2}$