

1) $f(\omega) = 1/a + 1/f$
 $f(1) = 1/a - f$

$1/a + 1/f = 1/a - f + a \Rightarrow 1 \cdot a = -1$
 $a = -1$

2)

$t = \sqrt{1-f} \quad f = \sqrt{1-t}$ $(1-\sqrt{f})(1+\sqrt{f}) = 1$ $f(t) + f(f) = 1$
 $t + f = 1$ $t^2 + f^2 = 1$ $(t+f)^2 = 1 + 2tf = 1$ $t+f = \sqrt{1}$
 $\sqrt{t} = \frac{1}{\sqrt{f}}$ $f(1-\sqrt{f}) + f(1-\sqrt{f}) = 1 + 2\sqrt{f}$

3)

$12 \int 12f(x) - 12f(-x) = 12x^2 - a$ $\Rightarrow -a f(x) = 12x^2 + 11$
 $12 \int 12f(x) - 12f(x) = 12x^2 + 11$ $f(x) = -12x^2 - \frac{11}{a}$

4)

$x=0 \Rightarrow 12f(0) = 12m-1$ $12f(0) = \frac{12 \cdot 0}{1} - 1$
 $a = -1 \Rightarrow 12f(0) = 12 \cdot 0 + 11$ $f(0) = \frac{12}{1}$
 $x=1 \Rightarrow 12f(1) = 12m-1$ $f(1) = \frac{12}{1}$
 $12 + 12m = 12m - 1 \Rightarrow m = \frac{9}{12}$

5)

$f(x) + f(\frac{1}{x}) = a(x + \frac{1}{x}) + 2b$
 $a=1 \quad 2b=-12 \quad b=-6$
 $f(x) = 12x - 6 \Rightarrow f(-1) = -12 - 6$
 $f(1) = -9$

6)

$f(x) = (x-1)\sqrt{1-x}$
 $g(x) = -\sqrt{1-x^2}$ $x \leq 1$
 $(x-1)\sqrt{1-x} = -(1-x)\sqrt{1-x} = -\sqrt{(1-x)^3}$

7) $f(x) = x\sqrt{x}$ $\Rightarrow x > 0$
 $g(x) = \sqrt{x^3}$

8) $f(x) = [\sqrt{x} - [\sqrt{x}]]$ $\Rightarrow x \geq 0$
 $g(x) = \sqrt{x-|x|}$
 $x-|x| \geq 0 \Rightarrow x \geq |x| \Rightarrow x \geq 0$

9) الف) $\left(\frac{f+g}{f-g} \right)(1)$

$f(1) = 2$
 $g(1) = 1$
 $\Rightarrow$

$\frac{2+1}{2-1} = 3$

$$\text{ب) } \left(\frac{f+g}{f-g} \right)(2) \quad \begin{array}{l} f(2) = 3 \\ g(2) = 4 \end{array} \quad \frac{3+4}{3-4} = \frac{7}{-1} = -7$$

c) $f(\cdot) g(\cdot)$ $g(\cdot) = 0$
 $g(\cdot) = 1$ $0 \wedge 1 = 0$

$$1.) \quad g(a) = f(\mu_{n-1}) \quad \mu_{n-1} = 1 \Rightarrow a = 1 \quad \mu_{n-1} = \frac{1}{\mu} \Rightarrow a = \frac{1}{\mu} \quad g(1) = f(1) = \frac{1}{1} = 1$$

$$g(a) = f(\mu_{n-1}) \quad \mu_{n-1} = -1 \Rightarrow a = -1 \quad \mu_{n-1} = \frac{1}{\mu} \Rightarrow a = \frac{1}{\mu} \quad g(-1) = f(-1) = \frac{1}{-1} = -1$$

$$g = \left\{ (1, 1), (0, \varepsilon), \left(\frac{1}{\mu}, a\right), \left(-\frac{1}{\mu}, -1\right), \left(\frac{1}{\mu}, -1\right) \right\}$$

$$c) \quad h(a) = f(|u|)$$

$$|a| = 2 \rightarrow \pm 2 \quad |a| = 1 \rightarrow \pm 1 \quad h(2) = 1 \quad h(3) = -1$$

$$|a| = -1 \quad x \quad |a| = \mu \rightarrow \pm \mu \quad h(-) = 1 \quad h(-) = -1$$

$$h\{(r, 1), (-r, 1), (r, a), (r, -1), (-r, -1)\}^{h(\cdot), \omega}$$