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# Self Study (100)

- 1=
- a)  $f(0) = -1$
  - b)  $f(1) = 2$
  - c)  $g(-4) = 1$
  - d)  $g(-1) = 2$
  - e)  $g(4) = 3$

- 2=
- i) 1, 2
  - ii) -5
  - iii) 1, 5

3=

$$f(x) = 2x + 3 \quad g(x) = 5 - x^2 \quad h(x) = \sqrt{x+2}$$

$$f(-2) = 2(-2) + 3 = -4 + 3 = -1$$

$$f\left(\frac{5}{2}\right) = 2\left(\frac{5}{2}\right) + 3 = 8$$

$$g(0) = 5 - 0^2 = 5$$

$$g(\sqrt{5}) = 5 - (\sqrt{5})^2 = 0$$

$$h(-2) = \sqrt{-2+2} = 0$$

$$h(2) = \sqrt{2+2} = 2$$

$$f(0) = 2(0) + 3 = 3$$

$$f(7) = 2(7) + 3 = 17$$

$$g(-2) = 5 - (-2)^2 = 1$$

$$g(t-1) = 5 - (t-1)^2$$

$$h(\sqrt{4}) = \sqrt{\sqrt{4}+2} = \sqrt{2+2} = 2$$

$$h(7) = \sqrt{7+2} = 3$$



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$$a) (\sqrt{2(11) + 3 - 7}) + 3(1)^2$$

$$b) (3(5)^2) - \left(\frac{10 - (-2)}{-2}\right)$$

$$27 - (-6) = 33$$

$$c) (\sqrt{2(-1) + 3 - 7}) + 3(1)^2$$

$$(1 - 7) + 3 = -3$$

$$d) \frac{\sqrt{2(39) + 3 - 7}}{\frac{10 - 4}{4}} = \frac{9 - 7}{\frac{6}{4}} = \frac{2}{\frac{3}{2}} = \frac{4}{3}$$

5:

$$a) (x+1)^2 + 2(x+1)$$

$$x^2 + 1 + 2x + 2 + 2x$$

$$x^2 + 4x + 3$$

$$b) (x-2)^3 + (x-2)$$

$$x^3 - 6x^2 + 12x - 8 + x - 2$$

$$x^3 - 6x^2 + 13x - 10$$

$$c) (2a)^2 - 1$$

$$4a^2 - 1$$

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

$$d) \frac{(x^3 - x) - (1^3 - 1)}{x - 1}$$

$$\frac{x^3 - x}{x - 1}$$

$$e) \frac{2(x+h)^2 + 3(x+h) - (2^2 + 3x)}{h}$$

$$\frac{2x^2 + 4xh + 2h^2 + 3x + 3h - 4 - 3x}{h}$$

h

$$\frac{4xh + 2h^2 + 3h}{h}$$

h

$$4x + 2h + 3$$

$$f) \frac{x^2 - 3x - (-2)}{x - 2} =$$

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