Tuesday, October 18, 2016 1:55 PM

① Let $g(x) = 4x^2 + 5$. Evaluate $\frac{g(x+h) - g(x)}{h}$ (INPUT)

$$4(x+h)^2 + 5 - [4x^2 + 5]$$
$$= 4(x^2 + 2hx + h^2) + 5 - 4x^2 - 5$$
$$= 4x^2 + 8hx + 4h^2 + 5 - 4x^2 - 5$$
$$\frac{8hx + 4h^2}{h} = 8x + 4h$$

② Solve for p: $(p^2+5)^2 - 7(p^2+5) + 10 = 0$

Let $p^2 + 5 = x$

$x^2 - 7x + 10 = 0$

$(x-5)(x-2) = 0$

$x = 5, 2$

$p^2 + 5 = 5$ $\quad p^2 + 5 = 2$

$p = 0, \pm i\sqrt{3}$

③ Graph:

A. $y = -2\left(\frac{1}{2}x + 5\right)^2 + 6$

B. $y = -4\left|\frac{1}{3}(x+6)\right| + 8$

C. $y = 10 - \sqrt{-2(x+6)}$

D. $y = -\frac{1}{2}(x-5)^2 + 3$

④ Solve for x, y, z:

$$-x + 2y + 4z = 4$$
$$x + 2y + 5z = 3$$
$$3x + 3y - z = 13$$

$(0, 4, -1)$