3. Which of the following are correct calculations for difference quotient of:

$$b(p) = 7p^2 + 8p + 1$$

$$b(p) = 7p^2 + 8p + 1$$
$$b(p+h) = 7(h+p)^2 + 8(h+p) + 1$$
$$= 7h^2 + 14hp + 8h + 7p^2 + 8p + 1$$
$$\frac{b(p+h) - b(p)}{h} = \frac{\left(7h^2 + 14ph + 8h + 7p^2 + 8p + 1\right) - \left(7(p+1)^2 + 8(p+1) + 1\right)}{h}$$
$$= \frac{7h^2 + 14ph + 8h}{h}$$
$$= \frac{h(7h + 14p + 8)}{h}$$
$$= 7h + 14p + 8$$

$$b(p) = 7p^2 + 8p + 1$$
$$b(p+h) = 7(h+p)^2 + 8(h+p) + 1$$
$$= 7h^2 + 14hp + 22h + 7p^2 + 22p + 16$$
$$\frac{b(p+h) - b(p)}{h} = \frac{\left(7h^2 + 14ph + 22h + 7p^2 + 22p + 16\right) - \left(7p^2 + 8p + 1\right)}{h}$$
$$= \frac{7h^2 + 14ph + 8h}{h}$$
$$= \frac{h(7h + 14p + 8)}{h}$$
$$= 7h + 14p + 8$$

$$b(p) = 7p^2 + 8p + 1$$
$$b(p+h) = 7(h+p)^2 + 8(h+p) + 1$$
$$= 7h^2 + 14hp + 8h + 7p^2 + 8p + 1$$
$$\frac{b(p+h) - b(p)}{h} = \frac{\left(7h^2 + 14ph + 8h + 7p^2 + 8p + 1\right) - \left(7p^2 + 8p + 1\right)}{h}$$
$$= \frac{7h^2 + 14ph + 8h}{h}$$
$$= \frac{h(7h + 14p + 8)}{h}$$
$$= 7h + 14p + 8$$

$$b(p) = 7p^2 + 8p + 1$$
$$b(p+h) = 7(h+p)^2 + 8(h+p) + 1$$
$$= 7h^2 + 14hp - 6h + 7p^2 - 6p$$
$$\frac{b(p+h) - b(p)}{h} = \frac{\left(7h^2 + 14ph + 36h + 7p^2 + 36p + 45\right) - \left(7p^2 + 8p + 1\right)}{h}$$
$$= \frac{7h^2 + 14ph + 8h}{h}$$
$$= \frac{h(7h + 14(p+1) + 8)}{h}$$
$$= 7h + 14p + 8$$

Solution